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(NASA-CR-160189) USER'S GUIDE FOR THE SKYLAB INTEGRATED MEDICAL DATA ANALYSIS SYSTEM (General Electric Co.) 96 p HC A05/MF A01			N79-25740
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Capabilities of the Skylab Integrated Medical Data Analysis System (SIMDAS) are described and illustrated in this document. User's instructions are also given for the operation of this system on the Univac 1100 Series Demand System at the Johnson Space Center.



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Page No.

1.0 PROGRAM DESCRIPTION GUIDE

A. IDENTIFICATION

Program Name	Skylab Integrated Medical Data Analysis System (SIMDAS)
Programmers Name	D. J. Grounds, G. T. Archer, and V. J. Marks
Technical Contact	D. J. Grounds, GE/TSSD, Houston
Date of Issue	November 21, 1975

B. GENERAL DESCRIPTION

The basic composition of the data analysis system is a special purpose data base in conjunction with online graphics output, and online and batch statistical analysis programs. The data base structure which was developed as a part of this analysis system is designed to make maximum use of inherent logical relationships within the data. For this reason it was found that generalized data base systems were not as efficient as a system designed specially for the Skylab medical experiments data. The four medical experiments included were: bicycle ergometry (M171), lower body negative pressure (M092), endocrine-metabolic studies (M073), and hematology and immunology (M110). Also included were the clinical and environmental (CERV) data. The data base was designed to retrieve a basic unit of these data defined by the flight, experiment, measurement, crewmember, and flight phase (i. e., preflight, inflight, or postflight). By using units of data defined in such a manner, comparisons can be made between different flight phases of the same measured variable and a maximum number of comparisons can be made between variables of the same or different experiments, between flights, and between subjects. It is significant to note that many of these capabilities have never been available in any automated system for these data. Each Skylab data element in this structure is associated with the time at which the measurement of sample was taken. The day of the year, reference 1973, gives a unique temporal coordinate for each variable to be used in the graphics display output. Also, time is an important parameter to be used as an input to some analysis programs.

The analysis algorithms which have been incorporated into the present system consist primarily of general purpose programs to be used for screening large portions of the data. It is recognized that the number of analyses which could be applied constitute a very large collection. For this reason, the data analysis system is structured such that analysis programs from two large statistical packages may be added whenever the need for more explicit statistical analysis is determined. The programs which are presently included in the Skylab Integrated Medical Data Analysis System can compute means, standard deviations, and t-tests for each basic unit of data.

The comparison of means between data is accomplished with a paired t-test. In order to assist in hypothesis development and testing, a set of regression functions has been employed, also. These functions displayed on a graphics CRT use least squares criterion to fit linear and nonlinear equations to the data plots. Data can be plotted against time or another variable as the independent variable. This cross plotting capability can readily detect relationships between various measurements taken at corresponding times. The regression fitting capability allows the user to mathematically verify those relationships visually identified. By using a combination of these regression analyses and graphic CRT displays, statistical regression models of a measured variable can be applied to the total flight duration for all flights and all subjects.

C. USAGE AND RESTRICTIONS

Machine, Operating System, and Compiler Required	- Univac 1110, EXEC 8, FORTRAN V
Peripheral Equipment Required	- Tektronics 4010-1 Graphics Terminal and Hardcopy Device
Approximate Memory Required	- 20000 ₁₀

D. PARTICULAR DESCRIPTION

Equations used - see Reference 1
Definition of Terms - See Reference 2

E. DESCRIPTION OF INPUT

The Skylab Integrated Medical Data Analysis System (SIMDAS) has been implemented on the NASA/JSC Univac 1110 computer and can be operated in the demand or batch mode. The instructions given are for the demand mode only since the batch mode requires the same instructions submitted in card form. The following procedure is required to establish connection for a remote terminal:

SET TERMINAL ON LINE, TO EVEN PARITY, AND 30 CPS

DIAL 483-4881; ASK FOR HIGH SPEED LINE TO 1110
(LOW SPEED OPERATES AT 10 CPS)

ANSWER OPERATOR QUESTIONS

SET PHONE IN MODEM AND TYPE SITE ID WITH NO CR.

RESPOND CR TO REQUEST FOR PASSWORD

EXAMPLE RUN CARD

@RUN,/N DBHOLD,7007-Q509-C, DB6-G03432, 10

TO DELETE TYPED CHARACTERS USE CTRL Z
FOR EACH BAD CHARACTER AND RETYPE

TO DELETE A COMPLETE LINE USE CTRL X

I/O TERMINATION:

HIT BREAK KEY DURING OUTPUT, RESPOND @@X TIO, CR
WAIT FOR PRINT BUFFER TO EMPTY

In order to use the SIMDAS the following system instructions are required:

@COPY SMEDEP.,TPF\$.

When control is again restored, the user must specify any flight or model data he wishes to use.

@ASG,A SL2.	{	For Skylab 2
@USE 10,SL2.		For Skylab 3
@ASG,A SL3.		For Skylab 4
@ASG,A SL4.		—
@ADD TGF		Assigns SL2., SL3., and SL4. automatically
@ASG,A Unit No.		For Model Data

Where,

Unit No. = 13 for Guyton's Model
14 for Red Cell Model

Other model or experimental data may be added on additional unit numbers, however, units 16 and 18 are dynamically assigned by SIMDAS for output from the BUIL function. The assigning of existing data files is only possible as long as present file space is maintained. The appropriate section of following procedure needs to be followed ONLY WHEN A SKYLAB FILE MUST BE BUILT FROM TAPE.

@ASG, UP SL2	}	For Skylab 2
@USE 10,SL2.		
@ASG, T 7.,8C, Tape No.		
@ASG, UP SL3.	}	For Skylab 3
@USE 1,SL3.		
@ASG, T 8.,8C, Tape No.		
@ASG, UP SL4.	}	For Skylab 4
@USE 12,SL4.		
@ASG, T 9.,8C, Tape No.		
@XQT SLFILE		

The user must then answer the questions asked by the program about which flight is desired.

Now that the system is loaded and the data files assigned, the user should begin execution by entering the following command.

@XQT MAPEL

Answer 'TYPE SHIFT-OUT' with a CR

Answer 'WANT HARD COPY QUESTION DURING PRINTOUT? (Y, N)'

The hard copy question provides a page division for tabular output, however, a negative (N) response will suppress this during output.

Answer 'DO YOU WISH TO BIAS ALL DATA BASE TIMES BY LAUNCH DATES? (Y, N)'

This allows the user to set launch dates to zero for the prime purpose of comparing data from one mission with data of another mission.

The command request appears as shown in Figure 1. Each of these commands will be explained in detail because they comprise the fundamental set of tools available to the system user.

```

>@XQT MAPEL
|
| TYPE SHIFT-OUT (SO) AND RETURN-->
|
| WANT HARD COPY QUESTION DURING PRINTOUT? (Y, N)
>N

DO YOU WISH TO BIAS ALL DATA BASE TIMES BY LAUNCH DATES? (Y, N)
>N
COMMAND(FETC,SCRC,LOOK,DATA,PLOT,BUIL,XPLO,MODV,STOP) A4,1X,9(A6,1X)
COMM IDEN IDEN IDEN IDEN IDEN
>FETC

```

Figure 1 Command Request

FETC

The FETC command is required first in order to read the data files and place the data of interest into the working area of the system. The instructions given for this command appear as shown in Figure 2.

```

DO YOU WISH INSTRUCTIONS? (Y,N)
>Y
(IDEN=1-6 CHARS. TO IDENTIFY DATA) < (NO.=1.-360, UNLESS FROM A MODEL)
< (DATA BASE=SL2,SL3,SL4,GUYT,GROD,LBNP,HEAT,)
IF DATA FROM A MODEL, IGNORE REST OF INPUT...
< (EXPER=M171,M092,M073,M110,CEVR,EXER,PRES)
< (MAN C=COMMANDER,S=SCIENCE PILOT,P=PILOT) < (PHASE=PRE,IN,POST)
< (DAY=IGNORE UNLESS FUNCTION EXER OR PRES)
INPUT GO WHEN FINISHED FETC/SCRCH INPUT, HIT CR IF WANT INSTRUCTIONS
      DATA  FUNCTN/
IDEN  NO.  BASE  EXPER  MAN  PHASE  DAY
>UVOL  1.  SL2  M073  C  PRE
>UVOLA          . . .  ALL
>GO

```

Figure 2 FETC Command

IDEN is a user defined name to identify the unit of data to be retrieved. This name may be made meaningful to the user to aid in remembering the names and to appear in documentation of graphics output. All other commands require input from data in the working area by specifying the identifying name.

NO. refers to the measurement number as found in Appendix 1, the data base directory. These directory numbers do not apply to data from a model.

DATA BASE requires input of SL2, SL3, SL4, GUYT, or BUIL which direct the retrieval program to the proper data base or model output.

FUNCTN/EXER refers to the Skylab experiment number (M171, M092, M073, M110, CEVR). The functions EXER or PRES are specified for the retrieval of all data from one bicycle ergometry experiment or LBNP experiment.

MAN requires an input of C for commander, S for science pilot, or P for the pilot.

PHASE requires the input of PRE for the preflight phase, IN for the inflight phase, and POST for the postflight phase. ALL will retrieve data for all phases.

DAY is only required when the EXER or PRES options are used in FUNCTN/EXER. Then it refers to the day on which the experiment was run.

This completes the required input for retrieving and labeling one unit of data. When all required data has been specified, the user must input GO.

The user is allowed to combine data when the FETC command as input with a data name (IDEN). The retrieved data will be combined until the user inputs GO. The working area of the system will contain the combined data defined by the FETC name along with each retrieved name separately defined. An example of output of this command is given in Figure 9.

SCRC

The working area for data in this program is fixed size. Therefore, when all operations are complete on the data in the working area and more data are required, the input of SCRC will clear the working area of its contents and prepare the program to receive more data as described under the FETC option. Messages will be printed for the user during FETC inputs when the storage capacity of the working area has been exceeded.

LOOK

This command provides the user a summary of data specified by its identifying name. The required location of these names to be input is indicated with the request by IDEN. A response of ALL in the place of a data name (IDEN) will produce a summary of all data in the working area. The summaries printed supply information shown in Figure 3.

```
COMMAND(FETC,SCRC,LOOK,DATA,PLOT,BUIL,XPL0,MODV,STOP) A4,1X,9(A6,1X)
COMM IDEN IDEN IDEN IDEN IDEN
:LOOK ALL
:
      DATA FUNCTN/
IDEN NO. BASE  EXPER  MAN PHASE  ...START....  ....STOP....  NO.
UVOL  1 SL2  M073  C  PRE  115  0  0  0  143  0  0  0  22
      .275+04=HIGH VALUE  710.  =LOW VALUE
      1359.  =MEAN  487.2  =STN.DEV.  1.721735=T AT .95
UVOLA  1 SL2  M073  C  ALL  115  0  0  0  187  0  0  0  63
      .275+04=HIGH VALUE  533.  =LOW VALUE
      1404.  =MEAN  416.3  =STN.DEV.  1.672830=T AT .95
UV2   1 SL2  M073  C  PRE  115  0  0  0  143  0  0  0  22
      .275+04=HIGH VALUE  710.  =LOW VALUE
      1359.  =MEAN  487.2  =STN.DEV.  1.721735=T AT .95
UV3   1 SL3  M073  C  PRE  189  0  0  0  207  0  0  0  17
      .201+04=HIGH VALUE  886.  =LOW VALUE
      1433.  =MEAN  328.0  =STN.DEV.  1.746426=T AT .95
UV4   1 SL4  M073  C  PRE  293  0  0  0  319  0  0  0  27
      .253+04=HIGH VALUE  .101+04=LOW VALUE
      1755.  =MEAN  472.2  =STN.DEV.  1.707018=T AT .95
UVOLC  1 SL2  M073  C  PRE  115  0  0  0  319  0  0  0  66
      .275+04=HIGH VALUE  710.  =LOW VALUE
      1540.  =MEAN  475.1  =STN.DEV.  1.671736=T AT .95
```

Figure 3 LOOK Output

DATA

The DATA command requires the same type of data specification input under IDEN as the LOOK command. The output from this command is identical to the LOOK command with the addition of each point of data printed along with the time when the observation was made. An example of output from the DATA command is given in Figure 4.

```
COMMAND (FETC, SCRC, LOOK, DATA, PLOT, BUIL, XPLD, MODV, STOP) A4, 1X, 9 (A6, 1X)
COMM IDEN    IDEN    IDEN    IDEN    IDEN
>DATA UNAKM
!
      DATA FUNCTN/
IDEN  NO.  BASE  EXPER  MAN  PHASE  ...START...  ....STOP....  NO.
UNAKM  3  SL3  M073  S  PPE  193  0 0 0  207  0 0 0  13
      304.  =HIGH VALUE  163.  =LOW VALUE
      229.5  =MEAN  49.99  =STM. DEV.  1.789073=T  AT .95
      192.5  193D  0H 0M 0S  JULY 12 1973
      162.8  194D  0H 0M 0S  JULY 13 1973
      204.6  195D  0H 0M 0S  JULY 14 1973
      280.5  196D  0H 0M 0S  JULY 15 1973
      183.7  197D  0H 0M 0S  JULY 16 1973
      273.9  198D  0H 0M 0S  JULY 17 1973
      291.5  199D  0H 0M 0S  JULY 18 1973
      287.1  200D  0H 0M 0S  JULY 19 1973
      185.9  201D  0H 0M 0S  JULY 20 1973
      207.9  202D  0H 0M 0S  JULY 21 1973
      187.0  203D  0H 0M 0S  JULY 22 1973
      303.6  206D  0H 0M 0S  JULY 25 1973
      222.2  207D  0H 0M 0S  JULY 26 1973
```

Figure 4 DATA Command

The DATA command may be used to modify data in the working area of the system. A response of MODV under the first IDEN and the data name to be modified under the second IDEN will allow the creation of a new and separate data name. The output from this command is identical to the DATA command with the addition of a printout of the day, old value, new value, and new name. An example of output from the DATA MODV command is given in Figure 5.

```
COMMAND(FETC,SCPC,LOOK,DATA,PLOT,BUIL,XPLO,MODV,STOP) A4,1X,9(A6,1X)
COMM IDEM  IDEN  IDEN  IDEN  IDEN
>DATA MODV  UNAK.
:
```

REQUEST TO MODIFY DATA ACCEPTED,
 ENTER MODIFY FUNCTION (MFUN), NEW VARIABLE NAME (NVALN),
 AND CONSTANT (VK)

```
MFUN=1, NEW=OLD + VK
=2, NEW=OLD - VK
=3, NEW=OLD * VK
=4, NEW=OLD / VK
=5, NEW=(OLD-VK)/VK + 100. 00
=6, NEW=OLD**2
=7, NEW=LN(OLD)
=8, BIAS TIME BY VK(DAYS)
```

(I1/A6/E12.5)

>3

>UNAKM

>1.1

IDEN	NO.	BASE	EXPER	MAN	PHASE	...START...		STOP....			NO.	
						DAY	HR	MN	SE	DAY	HR		MN
UNAK	3	2L3	M073	3	PRE	189	0	0	207	0	0	0	15
						276.	=HIGH VALUE		148.	=LOW VALUE			
						213.2	=MEAN	45.42	=STD. DEV.	1.770815=T AT .95			
						.27216+06	275.00	302.50		UNAKM			
							275.0	189D	0H 0M 0S JULY 8 1973				
						.27360+06	211.00	232.10		UNAKM			
							211.0	190D	0H 0M 0S JULY 9 1973				
						.27792+06	175.00	192.50		UNAKM			
							175.0	193D	0H 0M 0S JULY 12 1973				
						.27936+06	148.00	162.60		UNAKM			
							148.0	194D	0H 0M 0S JULY 13 1973				

Figure 5 DATA MODV Command

PLOT

The PLOT command allows the user to display his data on a graphics CRT terminal. The plot capabilities of this system were written for the Tektronix 4010-1 and are set to operate on a high speed (30 cps) line. The interactive instructions given by the system are shown in Figure 6.

INPUT HEADING WANTED. (15A4)													
>URINE VOL (ML) SKYLAB 2 CDR													
(IDEN=DATA IDEN,SAME,GO) (L=1.-6. FOR LOC.)													
(P,1.=STAIR PLT 1ST.PT.HORIZ,2.=STAIR 2ND.PT.HORIZ,													
3.=NO LINES,OR PT TO PT,PLT.)													
(X=1.FOR X SYMBOL AT EACH POINT)													
(START/STOP LEFT BLANK MEANS PLOT ALL TIME OF DATA)													
.....X AXIS (TIME).....													
.....Y AXIS.....START....STOP....BIAS....													
IDEN	HIGH	LOW	L	P	X	DAY	HR	MN	SE	DAY	HR	MN	SE
>UUVOL2	2500.	500.	1.	1.									

Figure 6 PLOT Instructions

IDEN is the user defined name as previously defined. There is currently a maximum of six variables which can be entered. HIGH and LOW are the limits of the plot to be supplied by the user. These can be found in LOOK or DATA (output). These numbers are input as real numbers and therefore, a decimal point is required. If IDEN = GO, then HIGH must be equal to 3., 4., or 5. to set the number of X-axis divisions.

L is a request for location. The locations are created by dividing the vertical axes to separate plots as shown below in Figure 7.

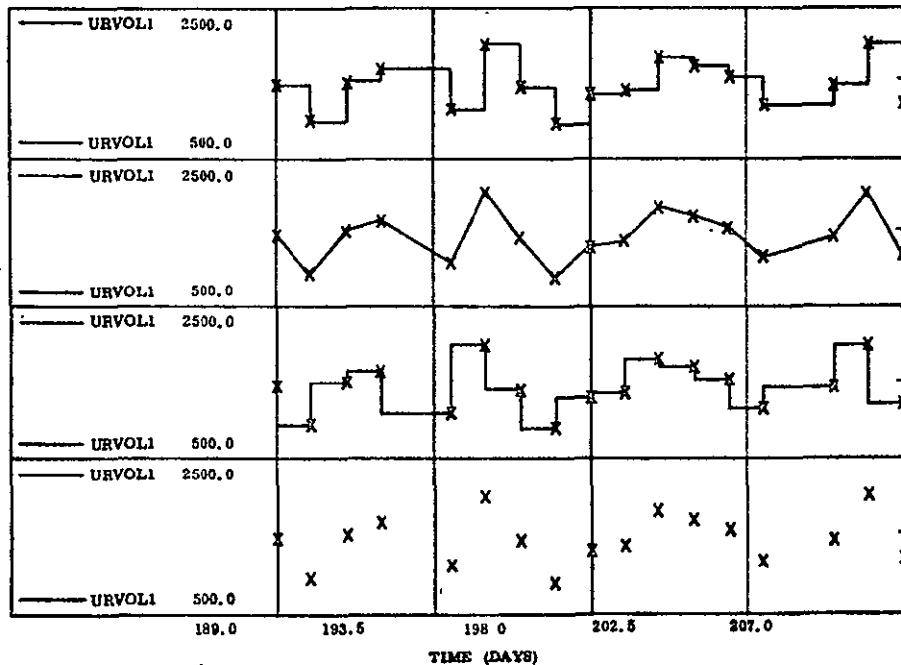


Figure 7 Multiplot Example

The upper plot is in location 1 and the bottom plot is in location 4. SIMDAS allows a maximum of six locations.

P is the format option which is also illustrated in Figure 7. The four possible choices are:

- blank = point to point plot (Loc. 2)
- 1 =步步图 with horizontal drawn from leading point (Loc. 1)
- 2 =步步图 with horizontal drawn from trailing point (Loc. 3)
- 3 = no lines (Loc. 4)

X is an option to mark each data point on the plot with an "X" as shown in all the plots of Figure 6. By entering a 1 the X's will be drawn; left blank they will be omitted. L, P, and X all must be entered as real numbers.

START is the request for the start time of the data to be plotted. Left blank, the first day of data will be used. DAY, HR, MN, SE means day, hour, minute, and second. For most data, day is the only input required.

STOP is a request for the last day of data to be plotted. Left blank, all data past the start time is plotted.

BIAS allows the user to shift the time axis of data to be plotted (e.g., if -208 is entered for Skylab 3 inflight data, the first point will be associated with Day 1.) Otherwise data from different flights will be displaced on the X-axis (time).

BUIL

The BUIL command allows the user to perform several types of analyses on the data and has the option to store appropriate results on a disk file to be retrieved for display or input to secondary analyses. The options given the user are shown in Figure 8.

The first option allows the user to ignore data points for analysis or display purposes. The additional instructions given for this option are also shown in Figure 8.

```
COMMAND: FETC, SCRC, LOOK, DATA, PLOT, BUIL, XPL0, MODV, STOP) A4, 1X, 9 (A6, 1X)
COMM IDEN    IDEN    IDEN    IDEN    IDEN
>BUIL
!
DO YOU WISH INSTRUCTIONS?
>Y
THIS COMMAND ALLOWS THE USER TO PERFORM THE
FOLLOWING FUNCTIONS UPON THE DATA
1 IGNORE DATA POINTS
2 LINEAR REGRESSION
3 PARABOLIC REGRESSION
7 TEST OF SIGNIFICANCE BETWEEN MEANS
9 STOP

SPECIFY BUILD FUNCTION
>1
!
INPUT IDEN AND UP TO 4 TIMES OF DATA TO IGNORE
INPUT GO WHEN FINISHED IGNORE INPUT.
IDEN    DAY    HR    MN    SE    DAY    HR    MN    SE    DAY    HR    MN    SE
>UNARM    193.          194.          195.          196.
>GO

SPECIFY BUILD FUNCTION
>9
```

Figure 8 BUIL Command

Where IDEN is the user defined name as previously mentioned, and where the times are specified under DAY, HR, MN, SE, only the day of the observation needs to be given.

The options 2 and 3 are the two regression functions which are presently available in the SIMDAS system (Reference 2). These functions, shown in Figure 7, provide a least-squares approximation to the coefficients of the chosen function. When one of the regression functions is chosen, the user is given the following query: "DO YOU WISH TO USE TIME AS THE INDEPENDENT VAR?". An answer of N will be followed by a request for two data IDEN's. The two units of data given must have at least two points which were taken on the same day as only points which are coincident in time are used in the analysis.

The tabular output given will be a regression of the two data units utilizing the data of first IDEN for the X coordinates. Included in the output are the coefficients of the equation of the chosen function, the data points which are used in the regression, and the corresponding points in the fitted equation.

If time is chosen as the independent variable only one variable IDEN is requested. The day of measurement is taken as the X-coordinate and the observation as the Y1 coordinate. Tabular output may be requested and the output of the fitted functions is stored on line under a new data IDEN specified by the user. These data in turn can be retrieved by the PLOT command and displayed graphically.

The other currently available option in the BUIL command is to test the difference between two means for significance. The only inputs required are the two data IDEN's. The method used is the T-test for paired observations which is discussed in Reference 2 report. The output of the program is the value calculated using the hypothesis that the samples come from the same normal population. The number of degrees of freedom are also given as output.

XPLO

The XPLO command allows the user to perform one of the two regression analyses shown in the BUIL command of Figure 8 and display the results graphically on the CRT. This same option exists with respect to using time for the independent variable as found in the BUIL command. Also, the restrictions of using only data IDEN's with at least two measurement days in common holds for the XPLO command. The plot that is created by using two independent units of data is called a scatter diagram. The scatter diagram is a plot which utilizes one variable as the X coordinate and the other as the Y coordinate. Corresponding points in time are shown with an 'X' on the plot and the fitted curve is plotted as a solid line using points generated by the regression programs. These plots make relationships between measurement or subjects much more evident to the user. Scale factors are established by the program and correspond to the maximums and minimums of the variables used. The number of divisions of the X and Y axes is determined by the program.

```

COMMAND(FETC,SCRC,LOOK,DATA,PLOT,BUIL,XPLD,MODV,STOP) A4,1X,9(A6,1X)
COMM IDEN IDEN IDEN IDEN IDEN
>FETC UVOLC
|
DO YOU WISH INSTRUCTIONS?(Y,N)
>YH
      DATA FUNCTN/
IDEN NO. BASE EXPER MAN PHASE DAY
>UV2 1. SL2 M073 C PRE
>UV3
>UV4
>GO
COMMAND(FETC,SCRC,LOOK,DATA,PLOT,BUIL,XPLD,MODV,STOP) A4,1X,9(A6,1X)
COMM IDEN IDEN IDEN IDEN IDEN
>FETC
|
DO YOU WISH INSTRUCTIONS?(Y,N)
>N
      DATA FUNCTN/
IDEN NO. BASE EXPER MAN PHASE DAY
>UHA 3. SL3 M073 3 PRE
>UH 4.
>GO

```

Figure 9 Combine Function

MODV

The MODV command allows the user to modify one data name in the working area of the system by another data name in the working area. The output from this command is identical to the DATA command with the addition of a printout of the day, old value, new value, and new name. An example of output from the MODV command is given in Figure 10.

COMMAND<FETC, SRC, LOOK, DATA, PLOT, BUIL, XPLD, MODV, STOP> A4,1X,9(A6,1X)
 COMM IDEN IDEN IDEN IDEN IDEN
 >MODV

THIS COMMAND ALLOWS THE USER TO MODIFY
 ONE VARIABLE BY ANOTHER VARIABLE

DO YOU WISH INSTRUCTIONS? (Y, NO)
 >Y

ENTER DESIRED MODIFY FUNCTION

MFUN=1, VAR3=VAR1 + VAR2
 =2, VAR3=VAR1 - VAR2
 =3, VAR3=VAR1 * VAR2
 =4, VAR3=VAR1 / VAR2
 =5, VAR3=(VAR2-VAR1).VAR1 + 100. (%).

>1

PLEASE LIST VAR1 TO BE MODIFIED BY VAR2 TO CREATE VAR3

VAR1	VAR2	VAR3		
>UNA	UK	UNAK		
.27216+06	209.00	66.000	275.00	UNAK
.27360+06	148.00	63.000	211.00	UNAK
.27792+06	117.00	58.000	175.00	UNAK
.27936+06	92.000	56.000	148.00	UNAK
.28080+06	118.00	68.000	186.00	UNAK
.28224+06	181.00	74.000	255.00	UNAK
.28368+06	125.00	42.000	167.00	UNAK
.28512+06	183.00	66.000	249.00	UNAK
.28656+06	214.00	51.000	265.00	UNAK
.28800+06	168.00	93.000	261.00	UNAK
.28944+06	97.000	72.000	169.00	UNAK
.29088+06	123.00	66.000	189.00	UNAK
.29232+06	111.00	59.000	170.00	UNAK
.29364+06	206.00	70.000	276.00	UNAK
.29808+06	129.00	73.000	202.00	UNAK

Figure 10 MODV Command

F. DESCRIPTION OF OUTPUT

See Reference 1 for example of SIMDAS output.

G. INTERNAL CHECKS AND EXITS

Input data is checked for validity before processing. IDEN's are checked against names in the FETC array. When buffer sizes are exceeded, an appropriate message is printed.

H. INDEPENDENT SUBROUTINES

All subroutines required by the SIMDAS are listed in Appendix A, the Program Listings.

I. SYSTEM SUBROUTINES

System subroutines used are:

SIGDM and STUD

J. COMPLETION OR FINAL CHECKOUT DATE

January 2, 1975

Revised Checkout - November 3, 1975

APPENDIX A

SKYLAB INTEGRATED MEDICAL DATA ANALYSIS SYSTEM

PROGRAM LISTING

CB6-G03432* SMEDEP.MAPEL(0)

1 SEG MAIN
2 IN SYSS*RLIB\$. NSTCPS/JSC
3 LIB LEC*UR
4 LIB FD8-MSC*STATPACK
5 IN DIR
6 IN ABUF
7 IN BBUF
8 IN PLOTS
9 IN NAMS
10 IN PLTI
11 IN TKTRNX
12 SEG RTV*,(MAIN)
13 IN RETREV
14 SEG BUIL*,(MAIN)
15 IN BUILD
16 SEG REGR*,BUIL
17 IN REGRESS
18 SEG PLCT*,REER
19 IN PLOT33
20 IN PLOT26
21 SEG MODV*,BUIL
22 IN MOD2V
23 END

6PRT,S SMEDEP.DIR(0)

DB6-G03432*SMEDEP.DIR(0)
1 CALL RETREV
2 STOP
3 END

&PRT,S SMEDEP.TIMP(C)

086-603432*SMEDEP.TIMP(0)

```
1      SUBROUTINE TIMPRT(T, ID1, IH1, IM1, IS1)
2      C  THIS ROUTINE COMPUTES TIME# FOR PRINTCLT.
3      C  INPUT T (TIME IN MINS.).
4      C  OUTPUT ID1=DAYs, IH1=HOURS, IM1=MINS, IS1=SECS.
5      TBIAS=0.
6      TM=T-TBIAS
7      C  WRITE(6,555)T, TM
8      C  555 FORMAT(' ***#TBIAS CHECK****',2F10.3)
9      IF(TM .GE. 0.) GO TO 1E
10     ID1 = ((TM - 1439.)/ 1440.)
11     X1 = TM - (ID1 * 1440.)
12     GO TO 20
13     ID1 = TM / 1440.
14     X1 = TM - (FLOAT(ID1) * 1440.)
15     IH1 = X1 / 60.
16     X1 = X1 - (FLOAT(IH1) * 60.)
17     IM1 = X1
18     IS1 = (X1 - FLOAT(IM1)) * 60.
19     RETURN
20     END
```

6PRT,S SMEDEP.PAGE3(0)

086-G03432*SMEDEP.PAGE3(C)

```
1      SUBROUTINE PAGE3
2      C  THIS ROUTINE ASKS FOR HARD COPY UNTILL N IS ENTERED.
3      C  THE PAGE IS THEN ERASED AND CURSOR MOVED TO HOME.
4      DATA INO/'N  ',IYO/'Y  '
5      5 CALL GCTOCH(34,1)
6      C
7      CALL BELL
8      WRITE(6,11)
9      11 FORMAT(' HARD COPY WANTED(Y,N)...')
10     8 READ(5,12,ERR=8) I
11     12 FORMAT(A4)
12     IF(I.EQ. INC) GO TO 25
13     IF(I.NE. IYO) GO TO 5
14     CALL HCCOPY
15     GO TO 5
16     C
17     25 CALL NEWPAG
18     RETURN
19     END
```

SPRT,S SMEDEP.LINES(0)

```

DB6-G03432*SMEDEP.LINES(C)
1      SUBROUTINE LINES
2      COMMON/PLOTS/ X1(85),Y(85),X1L(85),YL(85),YC(85),YDEV(85),
3      *          YDSQ(5),H(3,3),T(3),S(12),VMEAN(3),
4      *          A,A1,B,B1,C,C1,AH,BH,CH,AN,AN1,AN2,SHIFTX,SHIFTY,
5      *          IEQ,AIV,NP,IERR,ISOLVE,NOTE,IFUNC,DELX,N,IXXY,IRR,IRI,JYES
6
7      CC  WRITE(6,6789)IFUNC,N,DELX
8      6789 FORMAT(1H ,2I5,F10.4)
9      CC  SUBROUTINE FOR DETERMINING LEAST-SQUARES SOLUTIONS OF
10     CC  PARAMETERS FOR LINEAR EQUATIONS OF THE FORM
11
12     CC  Y = A + (B*X1) + (C*X2) + (D*X3),
13
14     CC  WHERE A MAY BE SPECIFIED
15
16     CC  DETERMINE VALUES FOR COEFFICIENTS OF LINEAR EQUATIONS TO BE
17     CC  SOLVED.
18     CC  H(1,1) = AN
19     CC  H(1,2) = S(2)
20     CC  H(2,2) = S(3)
21     CC  H(2,1) = H(1,2)
22     CC  T(1) = S(1)
23     CC  T(2) = S(4)
24     C  SOLVE FOR PARAMETERS.
25     C  CALL SOLVES
26     C  IF (IERR .EQ. 1) RETURN
27     C  A = AH
28     C  B = BH
29     C  COMPUTED VALUES OF Y AND Y RESIDUALS
30     DO 40 I = 1, N
31     YC(I) = A + B*X1(I)
32     YDEV(I) = Y(I) - YC(I)
33     40 CONTINUE
34     RETURN
35     END

```

QRT,S SMEDEP.PARA(0)

```

DB6-G03432*SMEDEP.PARA(0)
1      SUBROUTINE PARAS
2      COMMON/PLOTS/ X1(85),Y(85),X1L(85),YL(85),YC(85),YDEV(85),
3      *          YDSQ(5),H(3,3),T(3),S(12),VMEAN(3),
4      *          A,A1,B,B1,C,C1,AF,BH,CF,AH,AN1,AN2,SHIFTX,SHIFTY,
5      *          IEQ,NIV,NP,IERR,ISOLVE,NOTE,IFUNC,CELEX,N,IXXY,IRR,IRI,JYES
6
7      CCCCCCCCCC
8      SUBROUTINE FOR DETERMINING LEAST-SQUARES SOLUTIONS OF
9      PARAMETERS FOR PARABOLIC EQUATIONS OF THE FORM
10
11      Y = A + (B*X) + (C*(X**2)),
12
13      WHERE A MAY BE SPECIFIED
14      H(1,1) = AN
15      H(1,2) = S(2)
16      H(1,3) = S(3)
17      H(2,1) = H(1,2)
18      H(2,2) = S(3)
19      H(2,3) = S(9)
20      H(3,1) = H(1,3)
21      H(3,2) = H(2,3)
22      H(3,3) = S(10)
23      T(1) = S(1)
24      T(2) = S(4)
25      T(3) = S(11)
26      C      SOLVE FOR PARAMETERS.
27      CALL SOLVES
28      IF (IERR .EQ. 1) RETURN
29      A = AH
30      B = BH
31      C = CF
32      C      COMPUTED VALUES OF Y AND Y RESIDUALS
33      30 DO 40 I = 1, N
34      YC(I) = A + (B * X1(I)) + (C * (X1(I) * X1(I)))
35      YDEV(I) = Y(I) - YC(I)
36      40 CONTINUE
37      RETURN
38      END

```

APRT,S SMEDEP.SOLVS(0)

```

CB6-603432*SMEDEP.SOLVS(C)
1      SUBROUTINE SOLVS
2      COMMON/PLOTS/ X1(85),Y(85),X1L(85),YL(85),YC(85),YDEV(85),
3      *          YDSQ(5),H(3,3),T(3),S(12),VMEAN(3),
4      *          A,A1,B,B1,C,C1,AH,BH,CH,AN,AN1,AN2,SHIFTX,SHIFTY,
5      *          IEQ,ANIV,NP,IERR,ISOLVE,NOTE,IFUNC,DELT,X,N,IXXY,IRR,IRI,JYES
6      DIMENSION U(12)
7
8      C  SUBROUTINE FOR SOLVING SIMULTANEOUS EQUATIONS
9
10     CC  WRITE(6,6789)IFUNC,N,DELT
11     6789  FORMAT(1H ,2F5.2,2I5,F10.4)
12     GO TO (30,30,40),NP
13     30  DENOM=(H(1,1)/H(1,2))-(H(2,1)/H(2,2))
14     IF(DENOM.EQ.0.)GO TO 6C
15     ANUM=(T(1)/H(1,2))-(T(2)/H(2,2))
16     AH=ANUM/DENOM
17     BH=(T(1)-(AH*T(1,1)))/H(1,2)
18     RETURN
19     40  U(1)=(T(1,1)*T(2,3))-(T(2,1)*T(1,3))
20     U(2)=(T(1,2)*T(2,3))-(T(2,2)*T(1,3))
21     U(3)=(T(1)*H(2,3))-(T(2)*H(1,3))
22     U(4)=(T(2,1)*H(3,3))-(H(3,1)*H(2,3))
23     U(5)=(H(2,2)*H(3,3))-(H(3,2)*H(2,3))
24     U(6)=(T(2)*H(3,3))-(T(3)*H(2,3))
25     DENOM=(U(1)/U(2))-U(4)/U(5)
26     IF(DENOM.EQ.0.)GO TO 6C
27     ANUM=(U(3)/U(2))-(U(6)/U(5))
28     AH=ANUM/DENOM
29     BH=(U(3)-(AH*U(1)))/U(2)
30     CH=(T(1)-(AH*T(1,1)))-(BH*H(1,2))/H(1,3)
31     RETURN
32     C  ERROR MESSAGE
33     60  WRITE(6,70)
34     70  FORMAT('0',//10X,'A ZERO DENOMINATOR EXISTS IN THE',
35     & ' CALCULATIONS OF SUBROUTINE SOLVE. THIS RUN HAS',
36     & ' BEEN TERMINATED.')
37     RETURN
38     END

```

APRT,S SMEDEP.GOTOCH(0)

DB6-G034324SMECEP.GOTOCH(0)

```
1      SUBROUTINE GOTOCH(I,J)
2      C  THIS ROLTINE MOVES THE A/N CURSOR TO LINE I COL J.
3      IY = 767 - ((I-1) * 21)
4      IX = J * 12
5      CALL MCVABS(IX,IY)
6      CALL ANMODE
7      RETURN
8      END
```

6PRT,S SMEDEP.RETREV(0)

DB6-G03432*SMEDEP.RETREV(0)

```

1      SUBROUTINE RETREV (LFLAG)
2      COMMON/ABUF/IF,IFD,ISIF,IFETC(100,9),ECT(500,3),IEND,IENDG
3      COMMON/BBUF/RREC(180),V(160),VSLCP(261),ID(60)
4      COMMON/NAMS/ITRSH(2),IHARD,IXMNV,IXMNC
5      EQLIVALENCE(RREC,B)
6      DIMENSION IDD(10),IICO(9),IEX(11),B(60),TLD(3)
7      DATA IICO/'FETC','LOOK','DATA','PLCT','STOP','SCRC','BUIL','XPLO',
8      & 'MCDV'
9      DATA IEX/'M171','M092','M092A','M073','M11C','M110A','DUMMY'
10     1 'CEVR','EXER','PRES',''
11     DIMENSION IIC(4),IPH(4),IDB(8)
12     DATA IIC/'C ','S ','P ',''
13     DATA IFF/'PRE ','IN ','POST','ALL '
14     DATA ICB/'SL2 ','SL3 ','SL4 ','GUYT','GROD','LBNP',
15     1 'BUIL','MODV'
16     DATA IGO/'GO ','IBLNK/'  '/,IALL/'ALL '
17     DATA JYES/'Y ','/ ,JNO/'N '  '/,TLD/145.,209.,320./
18     IF (GOT(1,1).NE.0.) GO TO 80
19     DEFINE FILE 1C(1000,190,U,NREC),11(1000,190,U,NREC)
20     DEFINE FILE 12(1000,190,U,NREC)
21     C CALL ERTRAN(6,'ADD .TGF ')
22     CALL INITT (300)
23     IF=0
24     IFD=C
25     ISIF=1
26     WRITE (6,20)
27     FORMAT (' WANT HARD COPY QUESTION DURING PRINTOUT?(Y,N)')
28     READ (5,60,ERR=40) IHARD
29     60 FORMAT (A4)
30     80 CONTINUE
31     IEND=1C0
32     IENDG=500
33     IF (IHARD.NE.JYES.AND.IHARD.NE.JNO) GO TO 40
34     WRITE(6,90)
35     90 FORMAT (' DO YOU WISH TO BIAS ALL DATA BASE TIMES',
36     1 ' BY LAUNCH CATES?(Y,N)')
37     READ(5,60) NTBAS
38     WRITE (6,120)
39     120 FORMAT (' COMMAND(FETC,SCRC,LOOK,DATA,PLOT,BUIL,XPLO,MCDV,STOP)','
40     1A4,1X,9(A6,1X)'' COMM IDEN',4(3X,'IDEN'))
41     140 READ (5,160,ERR=140) ICOM,(ID(I),I=1,9)
42     160 FORMAT (A4,1X,9(A6,1X))
43     IF (ICOM.EQ.IALL) GO TO 1460
44     00 180 I=1,9
45     I1=I
46     IF (ICOM.EQ.IICO(I)) GO TO 220
47     180 CONTINUE
48     WRITE (6,200)
49     200 FORMAT (' COMMAND NOT RECOGNIZED...TRY AGAIN')
50     220 GO TO (260,1580,1580,2380,2440,240,2400,2420,2430), I1
51     C SCRATCH (SCRCH) COMMAND...
52     240 IFD=0
53     IEND=1C0
54     IENDG=500
55
56

```

```

57      ISIF=1
58      IF=0
59      IXMNV=C
60      IXMNC=C
61      C      FETCF COMMAND
62      26C    CALL NEWPAG
63      NCOMB=ID(1)
64      IF (NCOMB.NE.IBLNK) NCB=IF+1
65      IF (IF.LT.ISIF) I1LST=1
66      WRITE (6,280)
67      28C    FORMAT (: DO YOU WISH INSTRUCTIONS?(Y,N)++)
68      300    READ (5,320,ERR=300) IANS
69      320    FORMAT (A1)
70      IF (IAAS.NE.JYES) GO TO 360
71      WRITE (6,340)
72      340    FORMAT (: (IDEN=1-6 CHARS. TO IDENTIFY DATA)** (NO.=1.-18C. UNLESS
73      1FROM A MODEL)**/* (DATA BASE=SL2,SL3,SL4,GUYT,GROD,LBNP,HEAT,)*/* I
74      2F DATA FROM A MODEL, IGNORE REST OF INPUT.../*/* (EXPER=M171,MC92,MD
75      373,M11C,CEVR,*,EXER,PRES)/*/* (MAN C=COMMANDER,S=SCIENCE PILOT,/*P
76      4=PILOT) (PHASE=PRE,IN,POST)/*/* (DAY=IGNORE UNLESS FUNCTION,/*EXER
77      5 OR PRES)/*/* INPUT EC WHEN FINISHED FETCH/SCRCH,/* INPUT,/*, HIT
78      6CR IF WANT INSTRUCTIONS')
79      360    CONTINUE
80      WRITE (6,380)
81      380    FORMAT (: *,13X,*DATA FUNCTN/*/* IDEN NO. BASE*,* EXPER M
82      1AN PHASE DAY*)
83      40C    I1=0
84      READ (5,420,ERR=860) IC(1),X,IC(5),(IC(I),I=2,4),X1
85      42C    FORMAT (A6,1X,F6.0,A4,3X,A5,2X,A1,3X,A4,3X,F8.0)
86      IF (ID(1).EQ.1GO) GO TO 1040
87      IF (ID(1).EQ.IBLNK) GO TO 260
88      C      FIND DATA BASE
89      IF (I1LST.EQ.C.AND.ID(5).EQ.IBLNK) GO TO 480
90      DO 440 I=1,7
91      IB=I
92      IF (ID(5).EQ.IDB(I)) GO TO 460
93      44C    CONTINUE
94      I1=3
95      GO TO 860
96      460    IBB=IB+9
97      IBS=IB
98      480    IF (I1LST.EQ.0.AND.X.EQ.0.) X=IFETC(IF,1)
99      I1=2
100     XNOR=0.
101     IZW=-268435456
102     IF (IBB.LE.12) GO TO 600
103     C      HERE IF DATA FROM MODEL OUTPUT.
104     READ (IBB,ERR=560,END=500) XNOW
105     50C    REWIND IBB
106     READ (IBB,ERR=560,END=560) XNOW
107     52C    READ (IBB,ERR=560,END=540) (B(JGEE),JGEE=1,4)
108     XNOR=XNOR+1.
109     IZW=B(1)*60.
110     IF (XACR.LT.1.5) X1=B(1)*60.
111     540    GO TO 520
112     REWIND IBB
113     IF (X.LT.1..OR.X.GT.XNOW) GO TO 860

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114      IF (X.GT.601.) GC TC 860
115      IE=11
116      IM=4
117      IP=4
118      GO TO 920
119      560      IM=IBB-9
120      580      WRITE (6,580) IBB,IBB,IBD(IM)
121      580      FORMAT ('UNIT',I3,' ERROR.',' UNIT',I3,' SHOULD BE ASSIGNED TO DA
122      1TA BASE ',A4)
123      GO TO 900
124      600      IF (X.LT.1) GO TO 860
125      C        FIND EXPERIMENT.
126      IF (IE.EQ.11) I1LST=1
127      IF (I1LST.EQ.0.AND.ID(2).EQ.IBLNK) GC TC 640
128      DO 620 I=1,1C
129      IE=I
130      IF (ID(2).EQ.IEX(I)) GO TO 640
131      CONTINUE
132      I1=4
133      GO TO 860
134      640      IF (X.LT.181) GO TO 660
135      IF (IE.NE.2.AND.IE.NE.5.AND.IE.NE.10) GO TO 860
136      660      IF (IE.LE.8) GO TO 780
137      C        HERE IF EXER OR PRES FUNCTION. MAKE SURE DATA NO,CORRECT.
138      IF (IE.EQ.9) GO TO 720
139      DO 680 I2=1,96,5
140      680      IF (X.EQ.I2) GO TO 780
141      DO 700 I2=151,281,5
142      700      IF (X.EQ.I2) GC TO 780
143      GO TC 860
144      DO 740 I2=1,41,5
145      740      IF (X.EQ.I2) GO TO 780
146      DO 760 I2=91,111,5
147      760      IF (X.EQ.I2) GO TO 780
148      GO TC 860
149      780      IF (X.GT.180.) IE=IE+1
150      IF (X.GT.180.) X=X-180.
151      C        FIND MAN.
152      IF (I1LST.EQ.0.AND.ID(3).EQ.IBLNK) GO TO 820
153      DO 800 I2=1,3
154      IM=I2
155      800      IF (ID(3).EQ.IIC(I2)) GO TO 820
156      CONTINUE
157      I1=5
158      GO TC 860
159      C        FIND PHASE.
160      820      IF (I1LST.EQ.0.AND.ID(4).EQ.IBLNK) GC TO 920
161      DO 840 I2=1,4
162      IP=I2
163      IF (ID(4).EQ.IPH(I2)) GO TO 920
164      840      CONTINUE
165      I1=6
166      C        HERE IF ERROR IN FETCH INPUT.
167      860      WRITE (6,880) I1
168      880      FORMAT ('**ERROR IN FLD',I2,' OF ABOVE FETCH INPUT**')
169      900      I1LST=1
170      GO TO 400

```

```

171      C
172      C          PUT FETCH INPUT IN IFETC ARRAY.
173 92C      IF=IF+1
174      IF (IF.LE.IEND) GO TO 98C
175      WRITE (6,940)
176      940 FORMAT ('* FETCH ARRAY FULL , WILL DO A GO...*')
177      WRITE (6,960) IF,IEND
178      960 FORMAT ('* IF=',I4,5X,'IEND=',I4)
179      IF=IEND
180      GO TO 1040
181      980 IF (IF.LE.1) GO TO 102C
182      I=IF-1
183      C          MAKE SURE NOT DUPLICATE ID.
184      DC 100C I2=1,1
185      IF (IFETC(I2,2).NE.ID(1)) GO TO 10CG
186      IF (IFETC(I2,2).NE.NCOMB) GO TO 10CG
187      I1=1
188      IF=IF-1
189      GO TO 86C
190      100C CONTINUE
191 1020      IFETC(IF,1)=X
192      IFETC(IF,2)=IE(1)
193      IFETC(IF,3)=IE
194      IFETC(IF,4)=IM
195      IFETC(IF,5)=IP
196      IFETC(IF,6)=IEB
197      IFETC(IF,7)=X1
198      IFETC(IF,8)=IZW
199      IFETC(IF,9)=XNOR
200      I1LST=C
201      GO TO 400
202
203      C          GO INPUT ...
204      C          HERE WHEN TO SEARCH DISK FILE FOR DATA REQUESTED IN IFETC ARRAY.
205 1040      DO 1440 I=1,3
206      IB=I+9
207      J=ISIF-1
208      IF (NTBAS.EQ.JYES) TBIASS=-TLD(I)*144C.
209      C          SEE IF ANY DATA FROM THIS SKYLAB WANTED.
210 1060      J=J+1
211      IF (.GT.IF) GO TO 144C
212      IF (IFETC(J,6).NE.IB) GO TO 1060
213      C          HERE WHEN FOUND A DATA WANTED IN THIS SKYLAB DATA BASE
214      NREC=1
215      C          READ FILE BOOK...
216      READ (IB*NREC,ERR=14C0) (ID(I1),I1=1,8)
217      NREC=ID(1)+2
218      JDAY=ID(2)+2
219      LSDAY=ID(5)+1
220      IF ((I+1).EQ.ID(7)) GO TO 1100
221      IZ=I+1
222      WRITE (6,108C) IB,IZ
223 1080      FORMAT ('**ERROR , UNIT ',I2,' DOESNT HAVE SL ',I1,' DATA**')
224      GO TO 1440
225
226      C          GO THROUGH FILE DAY STARTING AT EARLIEST ENTRY TO LAST ENTRY.
227 1100      LEODE=NREC

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```

228      READ (IB*NREC,ERR=1400) (ID(I1),I1=1,60)
229      NNREC=ID(8)+2
230
231      C      GO THROUGH IFETC ARRAY TO SEE IF ANY DATA WANTS THIS DAYS DATA.
232      C      COMPUTE INDEX OF MISSION PHASE WORD IN DAY RECORD.
233      1120  IF (IFETC(J,6).NE.IB) GO TO 1340
234      C      KW=IFETC(J,3)
235      C      IF (KW.GT.8) KW=KW-8
236      C      IW=((KW-1)*6)+9
237      C      IW=IW+((IFETC(J,4)-1)*2)
238      C      IF (ID(IW).EQ.-1) GO TO 1340
239      C      IF (ID(IW+1).LT.0) GO TO 1340
240      C      IF (IFETC(J,5).EQ.4) GC TO 1130
241      C      IF ((ID(IW)/100).NE.IFETC(J,5)) GO TO 1340
242      1130  NREC=ID(IW+1)+LSDAY+1
243      C      READ FILE EXPERMT
244      C      READ (IB*NREC,ERR=1400) (IDD(I1),I1=1,10), (RREC(I1),I1=1,180)
245      C      DO VALIDITY CK ON THIS EXPERMT RECORD COMPARED TO FILE DAY REC.
246      C      I1=1
247      C      IF (IDD(1).NE.ID(1)) GO TO 1360
248      C      I1=2
249      C      IF (IDD(7).NE.KW) GO TO 1360
250      C      I1=3
251      C      IF (IDD(8).NE.IFETC(J,4)) GO TO 1360
252      C      I1=4
253      C      IF (IDD(9).NE.ID(IW)) GO TO 80
254      C      I1=5
255      C      IF (IDD(10).NE.(I+1)) GO TO 1360
256      C      GET DATA IN FILE EXPERMT FOR THIS INPUT
257      C      IR=IFETC(J,1)
258      C      IF (IFETC(J,3).LE.8) GC TO 1140
259      C      IF (IFETC(J,8).NE.-268435456) GC TO 1340
260      C      IF (IFETC(J,7).NE.IDD(1).AND.IFETC(J,7).NE.0) GO TO 1340
261      C      IF ((IFD+5).GT.IENDG) GO TO 1160
262      C      IFD=IFD+1
263      C      GO TO 1200
264      1140  IFC=IFC+1
265      C      IF (IFC.LE.IENDG) GO TO 1260
266      C      HERE IF REACHED LIMIT OF GOT ARRAY
267      1160  WRITE (6,1180) IFETC(J,1)
268      1180  FORMAT (*' BUFFER FOR SL DATA FULL.'/* WILL CONTINUE WITH ALL IDENT
269      C      IS ENTERED BEFORE *,A6)
270      C      IFETC(1,8)=-268435456
271      C      GO TO 100
272
273      1200  I2=1
274      C      I3=1
275      C      I4=5
276      C      IF (IFETC(J,3).GT.9) GC TO 1220
277      C      I2=5
278      C      I3=5
279      C      I4=25
280      1220  IFETC(1,7)=IDD(1)
281      C      IFETC(1,9)=5
282      C      IFETC(1,8)=IFC
283      1240  GOT(IFC,1)=(IDD(1)*1440.0)+I2*TBIAS
284      GOT(IFC,2)=RREC(IR)

```

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285      C      PUT NEXT 4 DATA ASSOCIATED WITH THIS VARIABLE IN GOT.
286      I2=I2+I3
287      IF (I2.GT.I4) GO TO 1340
288      GOT(IFC,3)=IFD+1
289      IF(IFETC(J,3).GT.8.AND.IFETC(J,3).LT.12)IR=IR+1
290      IFD=IFC+1
291      GO TO 1240
292      C      HERE IF NOT EXEC OR PRES FUNCTION.
293      1260    GOT(IFD,1)=IDC(1)*1440.+TBIAS
294      GOT(IFD,2)=RREC(IR)
295      IF (IFETC(J,8).NE.-268435456) GO TO 1280
296      C      HERE IF 1ST ENTRY IN GOT FOR THIS DATA.
297      IFETC(J,8)=IFD
298      IFETC(J,9)=1
299      GO TO 1340
300      C      HERE IF NOT 1ST ENTRY IN GOT FOR THIS VARIABLE.
301      1280    I2=IFETC(J,9)
302      IFETC(J,9)=IFETC(J,9)+1
303      I1=IFETC(J,8)
304      1300    I2=I2-1
305      IF (I2.EQ.0) GO TO 1320
306      I1=GCT(I1,3)
307      GO TO 1300
308      1320    GOT(I1,3)=IFC
309
310      C
311      1340    J=J+1
312      IF (J.LE.IF) GO TO 112C
313      IF (LEND0.EQ.J.DAY) GO TO 1440
314      NREC=NREC
315      J=ISIF
316      GO TO 1100
317      C
318      1360    I2=NREC-LSDAY-1
319      WRITE(6,138C) I1,LEND0,I2,IFETC(J,2)
320      1380    FORMAT('**DETECTED AMBIGUITY',I2,' BETWEEN REC.',I5,' OF DAY//'
321      1AND REC.',I5,' OF EXPERMNT WHEN ', 'PROCESSING ',A6)
322      GO TO 1340
323      C
324      1400    WRITE(6,1420) NREC,IB
325      1420    FORMAT('**ERROR WHEN READING REC.',I5,' CF FILE', ' CN UNIT',I3//'
326      1RLN ABORTED')
327      RETURN
328      C
329      1440    CONTINUE
330      GO TO 1560
331      C      ALL COMMAND TO CLMP TABLES.....
332      1460    DO 150C I=1,IF
333      WRITE(6,148C) (IFETC(I,I1),I1=1,9)
334      1480    FORMAT(' ',I7,1X,A6,5I7,I12,I7)
335      1500    CONTINUE
336      DO 154C I=1,IFC
337      WRITE(6,152C) (GOT(I,I1),I1=1,3),I
338      1520    FORMAT(' ',3F12.3,I7)
339      1540    CONTINUE
340
341

```

```

342      GO TO 100
343 1560  ISIF=IF+1
344
345  C  IGNO REMOVES ALL NEGATIVE NUMBERS FROM THE SIGMA3 D.B.
346
347      IF (IBB.LE.12) CALL IGNO
348      IF (NCOMB.EQ.IBLNK) GO TO 100
349      IF=IF+1
350      ISIF=IF+1
351      IFETC(IF,1)=IFETC(NCB,1)
352      IFETC(IF,2)=NCOMB
353      IFETC(IF,3)=IFETC(NCB,3)
354      IFETC(IF,4)=IFETC(NCB,4)
355      IFETC(IF,5)=IFETC(NCB,5)
356      IFETC(IF,6)=IFETC(NCB,6)
357      IFETC(IF,7)=IFETC(NCB,7)
358      IFETC(IF,8)=IFETC(NCB,8)
359      IFETC(IF,9)=C
360      IFM1=IF-1
361      DO 1570 I=NCB,IFM1
362      IFETC(IF,9)=IFETC(IF,9)+IFETC(I,9)
363 1570  CONTINUE
364      J=J+1
365      JK=IF-NCB
366      NNX=IFETC(NCB,8)
367 1571  JK=JK-1
368      IF (JK.LT.1) GO TO 100
369 1572  NNXS=NNX
370      NNX=GOT(NNX,3)
371      IF (NNX.GT.0) GO TO 1572
372      NCB=NCB+1
373      GOT(NNXS,3)=IFETC(NCB,8)
374      NNX=IFETC(NCB,8)
375      GO TO 1571
376
377  C  GO TO 100
378
379  C  LOOK COMMAND OR DATA COMMAND.....
380 1580  IP=50
381  IW2=0
382  CALL NEWPAG
383  DO 2360 I=1,9
384  IF (ID(1).EQ.IALL) GO TO 1640
385  IF (ID(I).EQ.IBLNK) GO TO 100
386  DO 1600 J=1,IF
387  J1=J
388  IF (ID(I).EQ.IDB(8)) GO TO 2350
389  IF (ID(I).EQ.IFETC(J,2)) GO TO 1660
390 1600  CONTINUE
391  IER=I
392 1610  IP=IP+1
393  IF (IP.GT.28) CALL RETPGE (IP,IHARD,NC)
394  WRITE (6,1620) ID(IER)
395 1620  FORMAT (' ',A6,' NOT RECOGNIZED.')
396  GO TO 2280
397 1640  J1=1
398  C  HERE WHEN FOUND VARIABLE LOOKING FOR IN IFETC...
399 1660  I1=IFETC(J1,3)

```

```

399      I2=IFETC(J1,4)
400      I3=IFETC(J1,5)
401      I4=IFETC(J1,6)-9
402      IF (I4.LT.1) I4=8
403      IW2=IW2+1
404      IF (ATBAS.EQ..YES) TBIAS=-TLD(I4)*1440.
405      IP=IP+1
406      IF (IP.GT.28) CALL RETPGE (IP,IHARD,JNO)
407      IF (IFETC(J1,6).LE.12) GO TO 1740
408      C HERE IF DATA FRCP A MCDEL.
409      IF (IFETC(J1,5).LE.0) GO TO 1760
410      IR=IFETC(J1,1)
411      IB=IFETC(J1,6)
412      IF (IB.EQ.16) IR=IR*2
413      REWIND IB
414      XNOR=IFETC(J1,9)
415      READ (IB,ERR=1700) XNOW
416      X=-50000000.
417      X1=50000000.
418      R1=-9999900.
419      IN=0
420      1680 IN=IN+1
421      READ (IB,ERR=1700,END=1700) (B(I9),I9=1,IR)
422      IF (IB.EQ.16) B(1)=B(IR-1)
423      IF (R1.LT.-9999895.) R1=B(1)
424      R2=B(1)
425      IF (B(IR).LT.X1) X1=B(IR)
426      IF (B(IR).GT.X) X=B(IR)
427      IF ((IN+1).LE.IFIX(XNOR)) GO TO 1680
428      CALL TIMPR(T1,ND1,NH1,NM1,NS1)
429      CALL TIMPR(T2,ND2,NH2,NM2,NS2)
430      IF (ICOM.EQ.IICO(3).AND.IW2.NE.1) IP=3C
431      GO TO 2060
432      1700 IN=IFETC(J1,6)-9
433      WRITE (6,1720) IDB(IN),IFETC(J1,2)
434      1720 FORMAT (*,ERR READING DATA BASE *,A4, * FOR *,A6)
435      GC TC 2280
436      C
437      1740 IF (IFETC(J1,8).NE.-268435456) GO TO 1800
438      1760 WRITE (6,1780) IFETC(J1,2),IFETC(J1,1),IDB(I4),IEX(I1),IIC(I2),IPH
439      1(I3)
440      1780 FORMAT (* *,A6,I4,1X,A4,3X,A5,3X,A1,3X,A4,5X,*NO DATA*)
441      C**** THIS WILL FIX GOT WHEN NO DATA OCCURS BETWEEN
442      C**** TWO FETC VARIABLES WITH DATA OR COMBINE
443      C**** LOOK/DATA 'NODATA VARI' MUST BE CALLED TO FIX
444      IF (NCCMB.EQ.IBLNK) GO TO 2280
445      C
446      NCB=NCB+1
447      IU=0
448      1785 IU=IU+1
449      IU=1-IU
450      C
451      IF (IUM.LT.1) IFETC(NCB-1,8)=IFETC(NCB,8)
452      C
453      IF (IUM.LT.1) GO TO 2280
454      IF (IFETC(IUM,9).LT.1) GC TC 1785
455      NSK=IFETC(IUM,8)
456      NSKL=IFETC(IUM,9)
457      DO 1790 IU=1,NSKL
458      NXG=NSK

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456      NSK=GOT(NSK,3)
457      IF (NSK.LT.1) GOT(NXG,3)=IFETC(J1+1,8)
458      1790  CONTINUE
459      GO TO 2280
460      C HERE WHEN THERE IS DATA FOR THIS VARIABLE IN GOT....
461      1800  IR=IFETC(J1,8)
462      IN=IFETC(J1,9)
463      X=-500C0000.
464      X1=500C0000.
465      J=1
466      AV=0.
467      1820  IF (GOT(IR,2).GT.X) X=GOT(IR,2)
468      IF (GOT(IR,2).LT.X1) X1=GOT(IR,2)
469      RREC(J)=GOT(IR,1)
470      RREC(J+1)=GOT(IR,2)
471      AV=AV+GOT(IR,2)
472      J=J+2
473      IN=IN-1
474      IF (IN.LE.0) GO TO 1840
475      IF (GOT(IR,3).GT.0.) GO TO 1830
476      C      IF (NCOMB.EQ.IFETC(J1,2)) IR=IR+1
477      C      IF (NCOMB.EQ.IFETC(J1,2).AND. IR.GT.IFETC(J1,9)) IR=IR-1
478      IR=IR+1
479      GO TO 1820
480      1830  IR=GOT(IR,3)
481      GO TO 1820
482      1840  CALL TIMPB (RREC(1),TBIAS,ND1,NH1,NM1,NS1)
483      CALL TIMPB (RREC(J-2),TBIAS,ND2,NH2,NM2,NS2)
484      NDF=IFETC(J1,9)-1
485      IF (NDF.LT.1) GO TO 2000
486      SD=0.
487      AV=AV/IFETC(J1,9)
488      IN=IFETC(J1,9)
489      IR=IFETC(J1,8)
490      1860  SC=SD+(GOT(IR,2)-AV)**2
491      IN=IN-1
492      IF (IN.LE.0) GO TO 1880
493      IF (GOT(IR,3).GT.0.) GO TO 1870
494      IR=IR+1
495      GO TO 1860
496      1870  IR=GOT(IR,3)
497      GO TO 1860
498      1880  SD=SQRT (SD/(IFETC(J1,9)-1))
499      C      TEST CALCULATION...
500      R1=.95
501      NDF=IFETC(J1,9)-1
502      IF (NDF.LT.1) GO TO 2000
503      R2=2.
504      CY=STUC(R2,NDF)
505      IF (R1-CY) 1940,1920,1900
506      1900  RX1=2.01
507      GO TO 1960
508      1920  TTEST=2.
509      GO TO 1980
510      1940  RX1=1.99
511      1960  TTEST=RX1
512      RYY=STLD(TTEST,NDF)

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```

513      IF (ABS(RYY-R1).LE..001) GO TO 196C
514      RX1=TTEST+(TTEST-R2)*(R1-RYY)/(RYY-CY)
515      R2=TTEST
516      OY=RYY
517      GO TO 1960
518 1980  IZ=0
519      GO TO 2020
520 2000  IWFL=2
521 2020  CONTINUE
522      IF (IW2.EQ.1) GO TO 2040
523      IF (IC0.EQ.IIC0(3)) IZ=IFETC(J1,9)
524      IF ((IZ+IP).GT.28) CALL RETPGE (IP,IHARD,JNO)
525      IP=IP+1
526      IP=IP+1
527      IF (IB.EQ.16) I1=8
528      IF (IP.GT.28) CALL RETPGE (IP,IHARD,AC)
529      WRITE (6,208C) IFETC(J1,2),IFETC(J1,1),IDB(I4),IEX(I1),IIC(I2),IPH
530      1(I3),ND1,NH1,NM1,NS1,ND2,NH2,NM2,NS2,IFETC(J1,9)
531      FCRMAT ('.',A6,I4,1X,A4,3X,A5,3X,A1,3X,A4,I5,3I3,I5,3I3,I6)
532      WRITE (6,210C) X,X1
533 2080  FORMAT ('.',9X,G13.3,'=HIGH VALUE',2X,G13.3,'=LOW VALUE')
534      IF (IFETC(J1,6).GT.12) GO TO 220C
535      IF (IWFL.NE.2) GO TO 2140
536      WRITE (6,212C)
537      FORMAT (' ONLY ONE PT. NO STATISTICS GENERATED')
538      IWFL=0
539      GO TO 2180
540 2140  CONTINUE
541      WRITE (6,216C) AV,SD,TTEST
542      FORMAT (' ',2X,G13.4,'=MEAN ',2X,G13.4,'=STD.DEV.',F10.6,'=T AT .
543      195')
544 2180  CONTINUE
545 2200  IF (ICCM.NE.IIC0(3)) GO TO 228C
546      C HERE IF DATA COMMAND...
547      IF (IFETC(J1,6).GT.12) GO TO 230C
548      I6=1
549 2220  IF (RREC(I6).LT.-9999899.) GO TO 227C
550      IF (ID(1).EQ.IDB(8)) CALL MCDVAL(RREC(I6),PFUN,NVALN,VK,u1)
551      CALL TIMPB (RREC(I6),TBIAS,ND1,NH1,NM1,NS1)
552      CALL MCYR (ND1,I4,I3,I2)
553      IP=IP+1
554      IF (IP.LE.28.CR.IHARD.EQ.JNO) GO TO 2240
555      CALL RETPGE (IP,IHARD,uNO)
556 2240  WRITE (6,226C) RREC(I6+1),ND1,NH1,NM1,NS1,I4,I3,I2
557 2260  FORMAT (' ',5X,G15.4,I6,'D',I3,'H',I3,'M',I3,'S',2X,A4,I3,I5)
558 2270  I6=I6+2
559      IF (I6.LT.J) GO TO 222C
560 2280  IF (ID(1).NE.IALL) GO TO 2360
561      J1=J1+1
562      IF (J1.LE.IF) GO TO 1660
563      GO TO 100
564      C HERE IF DATA FRM A MODEL.
565 2300  REWIND IB
566      READ (IB,ERR=1700) X
567      IN=IFETC(J1,9)
568      DO 234C I9=1,IN
569      READ (IB,ERR=1700,END=1700) (B(I1),I1=1,IR)

```

```

570      IF (IB.EQ.16) B(1)=B(IR-1)
571      B(2)=B(IR)
572      IF (B(1).LT.-9999899.) GO TO 2340
573      IF (ID(1).EQ.IDB(8)) CALL MODVAL(B(1),MFUN,NVALN,VK,J1)
574      CALL TIMPRT(B(1),NE1,NF1,NM1,NS1)
575      IP=IP+1
576      IF (IP.LE.28.OR.IHARD.EQ.JNO) GO TO 2320
577      CALL RETPGE(IP,IHARD,JNO)
578      2320  WRITE(6,2260) B(IR),ND1,NH1,NM1,NS1
579      2340  CONTINUE
580      GO TO 2280
581      2350  DO 2353 JX=1,IF
582      2353  IF (ID(2).EQ.IFETC(JX,2)) GO TO 2354
583      IER=2
584      GO TO 1610
585      2354  WRITE(6,2351)
586      2351  FORMAT(//'* REQUEST TO MODIFY DATA ACCEPTED,*/
587      1  * ENTER MODIFY FUNCTION (MFUN), NEW VARIABLE NAME (NVALN),*/
588      2  * AND CONSTANT (VK)/* MFUN=1, NEW=OLD + VK*/
589      3  *           =2, NEW=OLD - VK/*           =3, NEW=OLD * VK*/
590      4  *           =4, NEW=OLD / VK*/
591      5  *           =5, NEW=(OLD-VK)/VK * 100. (%)*/
592      6  *           =6, NEW=OLD**2/*           =7, NEW=LN(OLD)*/
593      7  *           =8, BIAS TIME BY VK(DAYS)/* (I1/A6/E12.5)*/
594      READ(5,2352)MFUN,NVALN,VK
595      2352  FFORMAT(I1/A6/E12.5)
596      2360  CONTINUE
597      GO TO 100
598      C PLOT COMMAND.....
599      2380  CALL PLOT26
600      GO TO 100
601      C
602      C IGNOR COMMAND
603      2400  CALL BLILD
604      GO TO 100
605      2420  CALL REGRES
606      GO TO 100
607      2430  CALL MCC2V
608      GO TO 100
609      2440  STOP
610      END

```

&PRT,S SMEDEP.IGNO(0)

DB6-603432*SMECEP.IGN0(0)

```
1      SUBROUTINE IGN0
2      COMMON/ABUF/IF,IFD,ISIF,IFETC(10C,9),GCT(500,3)
3      DO 40 IRR=1,IF
4      IND = IFETC(IRR,9)
5      IG = IFETC(IRR,8)
6      IGX = IG
7      29 IF(GGT(IG,2)+2222.99,30,99
8      99 CONTINUE
9      IGO=IG
10     98 CONTINUE
11     IG = GCT(IG,3)
12     IND = IND - 1
13     IF(IND.GT.0) GO TO 29
14     GO TO 40
15     30 IFETC(IRR,9) = IFETC(IRR,9) - 1
16     IF(IFETC(IRR,9).GT.0) GO TO 33
17     IFETC(IRR,8) = -268435456
18     GO TO 38
19     33 IF(IGX.EQ.IG) IFETC(IRR,8) = GOT(IG,3)
20     IF(IGX.NE.IG) GOT(IGO,3) = GOT(IG,3)
21     38 GOT(IG,1) = -9999900.
22     IGX = IFETC(IRR,8)
23     GO TO 98
24     40 CONTINUE
25     RETURN
26     END
```

6PRT,S SMEDEP.RETPG2(0)

```
DB6-603432*SMEDEP.RETPG2(0)
1      SUBROUTINE RETPGE(IP,IHARD,JNO)
2      IF(IP.GT.49) GO TO 150
3      IF(IHARD.EQ.JNO) RETURN
4      CALL PAGE3
5      15C WRITE(6,151)
6      151 FORMAT(' ',11X,'DATA', ' FUNCTN',12X,'...', 'START...', '',
7      1 '...', 'STOP...', ' NO.', '/' IDEN ' NO.', 'BASE', 'EXPER', ' ',
8      2 'MAN PHASE',2(' DAY HR MN SE'), ' DATA')
9      IP = 2
10     RETURN
11     END
```

```
@PRT,S  SMEDEP.MCDVAL(0)
```

```

DB6-G03432*SMEDEP.MODVAL(0)
1      SUBROUTINE MODVAL(DATA, MFUN, NVALN, VK, J1)
2      COMMON/ABUF/IF, IFD, ISIF, IFETC(100,5), GCT(500,3), IENC, IENDG
3      REAL DATA(2)
4      IF (MFLN.LT.1 .OR. MFUN.GT.8) GO TO 500
5      GO TO (10,20,30,40,50,60,70,80), MFLN
6      10  DATAN=DATA(2)+VK
7      GO TO 100
8      20  DATAN=DATA(2)-VK
9      GO TO 100
10     30  DATAN=DATA(2)*VK
11     GO TO 100
12     40  DATAN=DATA(2)/VK
13     GO TO 100
14     50  DATAN=(DATA(2)-VK)/VK * 100.
15     GO TO 100
16     60  DATAN=DATA(2)**2
17     GO TO 100
18     70  DATAN= ALOG(DATA(2))
19     GO TO 100
20     80  DATAN=DATA(1)+VK*1440.
21     100 CONTINUE
22     WRITE(6,110) DATA, DATAN, NVALN
23     110 FORMAT(3G15.5,5X,A6)
24     IF (NVALN.EQ.NVALL) GO TO 140
25     NVALL=NVALN
26     NC=0
27     IF=IF+1
28     ISIF=ISIF+1
29     IF (IF.LE.IEAE) GO TO 130
30     WRITE(6,120)
31     120 FORMAT(//'*'*** FETC ARRAY FULL')
32     IF=IF-1
33     GO TO 520
34     130 IFETC(IF,1)=IFETC(J1,1)
35     IFETC(IF,2)=NVALN
36     IFETC(IF,3)=IFETC(J1,3)
37     IFETC(IF,4)=IFETC(J1,4)
38     IFETC(IF,5)=IFETC(J1,5)
39     IFETC(IF,6)=IFETC(J1,6)
40     IF (IFETC(IF,6).GT.12) IFETC(IF,6)=9
41     IFETC(IF,7)=IFETC(J1,7)
42     IFETC(IF,8)=IFD+1
43     IFETC(IF,9)=IFETC(J1,9)
44     140 IFD=IFD+1
45     IF (IFD.LE.IENDG) GO TO 160
46     WRITE(6,150)
47     150 FORMAT(//'*'*** DATA BUFFER FULL')
48     IFD=IFD-1
49     GO TO 520
50     160 GOT(IFD,1)=DATA(1)
51     IF (MFLN.EQ.7) GOT(IFD,1)=DATAN
52     GOT(IFD,2)=DATAN
53     GOT(IFD,3)=0.
54     NC=NC+1
55     IF (NC.LT.IFETC(IF,9)) GOT(IFD,3)=IFD+1
56     RETURN

```

```
57      500  WRITE(6,510)MFUN
58      510  FFORMAT(//'* *** INCORRECT MODIFY FUNCTION*',I7)
59      520  WRITE(6,530)
60      530  FORMAT(' REQUEST TO MODIFY DATA DENIED')//)
61      RETURN
62      END
```

```
6PRT,S  SMEDEP.MCYR(0)
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DB6-G03432*SMEDEP.MDYR(0)

```
1      SUBROUTINE MDYR(ITT,IM,ID,IY)
2      C  INPUT.. ITT=DAY(1/1/73=1,12/30/72=-1 ETC.)
3      C  THIS ROUTINE RETURNS IM=ALPHA MONTH, ID=INTEGER DAY ,
4      C  IY=INTEGER YEAR.
5      C  THIS ROUTINE WILL GENERATE DATES FROM 1960 ON....
6      DIMENSION M(12),MA(12)
7      DATA M/31,28,31,30,31,30,31,31,30,31,30,31/
8      DATA MA/'JAN ','FEB ','MAR ','APR ','MAY ','JUNE',
9      1 'JULY ','AUG ','SEPT ','OCT ','NOV ','DEC '
10     IT = ITT + 4749
11     I = IT / 1461
12     IL = IT - (I * 1461)
13     IZ = 366
14     DO 10 I1 = 1,4
15     I11 = I1
16     ID = IL
17     IL = IL - IZ
18     IF(IL .LE. 0) GO TO 15
19     IZ = 365
20     10 CONTINUE
21     C  FIND YEAR.....
22     15 IY = (I*4) + I11 + 1959
23     C  FIND MONTH.....
24     M(2) = 28
25     IL = IY / 4
26     IF(IL .EQ. (IL*4)) M(2) = 29
27     DO 20 I = 1,12
28     I1 = I
29     IL = ID
30     ID = ID - M(I)
31     IF(ID .LE. 0) GO TO 25
32     20 CONTINUE
33     25 IM = MA(I1)
34     ID = IL
35     RETURN
36     END
```

6PRT,S SMEDEP.RSUM2(0)

```

DB6-G03432*SMEDEP.RSUM2(C)
1      SUBROUTINE RSLM2
2      COMMON/PLOTS/ X1(85),Y(85),X1L(85),YL(85),YC(85),YCEV(85),
3      *      YDSQ(5),H(3,3),T(3),S(12),VMEAN(3),
4      *      A,A1,B,B1,C,C1,AH,BH,CH,AN,AN1,AN2,SHIFTX,SHIFTY,
5      *      IEQ,ANIV,NP,IERR,ISOLVE,NOTE,IFUNC,CELEX,N,IXXY,IRR,IRI,JYES
6      COMMON/PLTI/XX2(170),XZZ(100),SMY,YHI,NG
7      SUBROUTINE FOR ORDERING DATA AND OBTAINING VARIOUS SUMS AND
8      STANDARD DEVIATIONS OF INPUT DATA
9
10     CCC ** CLEAR COMMON BLOCK
11
12     ISOLVE=0
13     NOTE=0
14     IERR=0
15     NG=50
16     DO 1 I=171,55
17     1 X1(I)=0.
18
19     CCC ** FIND THE SMALLEST Y
20
21     YHI=Y(1)
22     SMY=Y(1)
23     DO 3 J=2,N
24     IF(SMY.LE.Y(J)) GOTO 3
25     SMY=Y(J)
26     3 CONTINUE
27     DO 33 J=2,N
28     IF(YHI.GE.Y(J)) GOTO 33
29     YHI=Y(J)
30     33 CONTINUE
31
32     IF(SMY.GT.0.0) GO TO 5
33     SHIFTY=(1.0-SMY)
34
35     CCC ** SHIFTING THE Y-AXIS
36
37     DO 4 K=1,N
38     Y(K)=Y(K)+SHIFTY
39     4 CONTINUE
40     GO TO 6
41
42     5 SHIFTY=0.0
43
44     CCC ORDER THE DATA FROM LOW TO HIGH VALUES OF X.
45     6 NK=N-1
46     DO 9 I=1,NK
47     IN=I+1
48     DO 8 J=IN,N
49     IF(X1(I).LE.X1(J)) GOTO 8
50     TEMP=X1(I)
51     X1(I)=X1(J)
52     X1(J)=TEMP
53     TEMP=Y(I)
54     Y(I)=Y(J)
55     Y(J)=TEMP
56     8 CONTINUE
57     9 CONTINUE

```

```

57      C
58      DO 132 I=1,85
59      XX2(I)=X1(I)
60      XX2(85+I)=Y(I)
61      WRITE(6,577)XX2(I),XX2(85+I)
62      FORMAT(1H ,2(F10.5,5X))
63      132 CONTINUE
64      IF(X1(1).GT.0.0)GO TO 11
65      SHIFTX=(1.0-X1(1))
66
67      C ** SHIFTING THE X-AXIS
68
69      DO 10 K=1,N
70      X1(K)=X1(K)+SHIFTX
71      10 CONTINUE
72      GO TO 12
73      11 SHIFTX=0.0
74
75      12 NIV=1
76      NP=2
77      IF(IEQ.EQ.2.OR.IEQ.EQ.4) NP=NP+1
78      AN=FLOAT(N)
79
80      C OBTAIN VARIOUS SUMS OF INPUT DATA.
81      DO 13 I=1,N
82      YL(I) = ALOG(Y(I))
83      X1L(I) = ALOG(X1(I))
84      X1SQ = X1(I) * X1(I)
85      S(1) = S(1) + Y(I)
86      S(2) = S(2) + X1(I)
87      S(3) = S(3) + X1SQ
88      S(4) = S(4) + (X1(I) * Y(I))
89      IF (IEQ .EQ. 1) GO TO 13
90      S(5) = S(5) + YL(I)
91      S(6) = S(6) + X1L(I)
92      S(7) = S(7) + (X1(I) * YL(I))
93      IF (IEC .NE. 2) GO TO 13
94      S(8) = S(8) + (X1L(I) * X1L(I))
95      S(9) = S(9) + (X1SQ * X1(I))
96      S(10) = S(10) + (X1SQ * X1SQ)
97      S(11) = S(11) + (X1SQ * Y(I))
98      13 CONTINUE
99
100     C CALCULATE MEANS OF INPUT DATA.
101     DO 14 J=1,2
102     VMEAN(J)=S(J)/AN
103
104     C 14 CONTINUE
105     C CALCULATE SUMS OF THE INPUT DATA ABLT THEIR MEANS.
106     DO 15 K=1,N
107     S(12)=S(12)+(Y(K)-VMEAN(1))**2
108
109     C 15 CONTINUE
110
111     C XDIF=(X1(N)-X1(1))/NG
112
113     IF(IEQ.GE.1.AND.IEQ.LE.6)GO TO 533
      WRITE(6,532)
      532 FORMAT(1H , ' ERROR N IEQ')

```

```

114      RETURN
115      533  GO TO (20,30,70,70,70,70),IEQ
116      20   CALL LINES
117      XP=X1(1)
118      DO 21 I=1,2
119      XZZ(I)=XP-SHIFTX
120      XZZ(NG+I)=(A+E*XP)-SHIFTY
121      XP=XP+XDIF*NG
122      21   CONTINUE
123      RETURN
124      30   CALL PARAS
125      XP=X1(1)
126      DO 31 I=1,NG
127      XZZ(I)=XP-SHIFTX
128      XZZ(NG+I)=A+B*XP+C*XP*XP-SHIFTY
129      XP=XP+XDIF
130      31   CONTINUE
131      RETURN
132      C 40   CALL PCWRS
133      C  XP=X1(1)
134      C  DO 41 I=1,NG
135      C  XZZ(I)=XP-SHIFTX
136      C  XZZ(NG+I)=A*XP**B-SHIFTY
137      C  XP=XP+XDIF
138      C  41   CONTINUE
139      C  RETURN
140      C  50   CALL ASYMS
141      C  XP=X1(1)
142      C  DO 51 I=1,NG
143      C  XZZ(I)=XP-SHIFTX
144      C  XZZ(NG+I)=A*XP**B+C-SHIFTY
145      C  XP=XP+XDIF
146      C  51   CONTINUE
147      C  RETURN
148      C  60   CALL EXPOS
149      C  XP=X1(1)
150      C  DO 61 I=1,NG
151      C  XZZ(I)=XP-SHIFTX
152      C  XZZ(NG+I)=EXP(A+B*XP)-SHIFTY
153      C  XP=XP+XDIF
154      C  61   CONTINUE
155      C  RETURN
156      70   IERR=1
157      RETURN
158      END

```

QPRT,S SMEEEP.SUMS(0)

```

DB6-G03432*SMEDEP.SUMS(0)
1      SUBROUTINE SLNSS
2      COMMON/PLOTS/ X1(85),Y(85),X1L(85),YL(85),YC(85),YDEV(85),
3      *      YDSQ(5),H(3,3),T(3),S(12),VMEAN(3),
4      *      A,A1,B,B1,C,C1,AH,BH,CH,AN,AN1,AN2,SHIFTX,SHIFTY,
5      *      IEQ,NIV,NP,IERR,ISOLVE,NOTE,IFUNC,DELX,N,IXXY,IRR,IRI,JYES
6      C      SUBROUTINE FOR ORDERING DATA AND OBTAINING VARIOUS SUMS AND
7      C      STANDARD DEVIATIONS OF INPUT DATA
8
9      CC  ** CLEAR COMMON BLOCK
10
11     C      ISOLVE=0
12     C      NOTE=0
13     C      IERR=0
14     C      WRITE(6,6789)IFUNC,N,DELX
15     C      DO 1 I=171,55
16     1 X1(I)=0.
17
18     CC  ** FIND THE SMALLEST Y
19
20     C      SHY=Y(1)
21     C      DO 3 J=2,N
22     C      IF(SMY.LE.Y(J)) GOTO 3
23     C      SHY=Y(J)
24     C      3 CONTINUE
25
26     C      IF(SMY.GT.0.0) GO TO 5
27     C      SHIFTY=(1.0-SMY)
28
29     CC  ** SHIFTING THE Y-AXIS
30
31     C      DO 4 K=1,N
32     C      Y(K)=Y(K)+SHIFTY
33     C      4 CONTINUE
34     C      GO TO 6
35     C      5 SHIFTY=0.0
36
37     C      ORDER THE DATA FROM LOW TO HIGH VALUES OF X.
38     C      6 NK=N-1
39     C      DO 9 I=1,NK
40     C      IN=I+1
41     C      DO 8 J=IN,N
42     C      IF(X1(I).LE.X1(J)) GOTO 8
43     C      TEMP=X1(I)
44     C      X1(I)=X1(J)
45     C      X1(J)=TEMP
46     C      TEMP=Y(I)
47     C      Y(I)=Y(J)
48     C      Y(J)=TEMP
49     C      8 CONTINUE
50     C      9 CONTINUE
51
52     C      IF(X1(1).GT.0.0)GO TO 11
53     C      SHIFTX=(1.0-X1(1))
54
55     CC  ** SHIFTING THE X-AXIS
56

```

```

57      DO 10 K=1,N
58      X1(K)=X1(K)+SHIFTX
59      10 CONTINUE
60      GO TO 12
61      11 SHIFTX=0.0
62
63      C 12 NIV=1
64      NP=2
65      IF (IEQ.EQ.2.CR.IEQ.EQ.4) NP=NP+1
66      AN=FLOAT(N)
67
68      C OBTAIN VARIOUS SUMS OF INPUT DATA.
69      DO 13 I=1,N
70      YL(I) = ALOG(Y(I))
71      X1L(I) = ALOG(X1(I))
72      X1SQ = X1(I) * X1(I)
73      YSQ=YSC+Y(I)*Y(I)
74      S(1) = S(1) + Y(I)
75      S(2) = S(2) + X1(I)
76      S(3) = S(3) + X1SQ
77      S(4) = S(4) + (X1(I) * Y(I))
78      RVAL=(N*S(4)-S(1)*S(2))/((N*S(3)-S(2)*S(2))*(N*YSQ-S(1)*S(1)))**.5
79      IF (IEQ .EQ. 1) GO TO 13
80      S(5) = S(5) + YL(I)
81      S(6) = S(6) + X1L(I)
82      S(7) = S(7) + (X1(I) * YL(I))
83      IF (IEQ .NE. 2) GO TO 13
84      S(8) = S(8) + (X1L(I) * X1L(I))
85      S(9) = S(9) + (X1SQ * X1(I))
86      S(10) = S(10) + (X1SQ * X1SQ)
87      S(11) = S(11) + (X1SQ * Y(I))
88      13 CONTINUE
89
90      C CALCULATE MEANS OF INPUT DATA.
91      DO 14 C=1,2
92      VMEAN(C)=S(J)/AN
93      14 CONTINUE
94      C CALCULATE SUMS OF THE INPUT DATA ABOUT THEIR MEANS.
95      DO 15 K=1,N
96      S(12)=S(12)+(Y(K)-VMEAN(1))**2
97      15 CONTINUE
98
99      C
100     CC WRITE(6,6789)IFUNC,N,DELX
101     6789 FORMAT(1H ,1HS,2I5,F10.4)
102     GO TO (20,30,70,70,70,70), IEQ
103
104     C *** ADDITIONAL CLFVE SUPPLIED BY USER CAN BE INSERTED AT
105     C *** STATEMENT 70 AND FOLLOWING
106
107     20 CALL LINES
108
109     C *** PRINT OUT THE GENERATED POINTS AT THE ORIGINAL STEP SIZE
110
111     CC WRITE(6,97)
112     DO 21 I=1,N
113     YNEW=A+B*X1(I)

```

```

114      XNEW=X1(I)-SHIFTX
115      YNEW=YNEW-SHIFTY
116      WRITE(6,98)XNEW,YNEW
117      21 CONTINUE
118
119      C ** CALCULATE THE SMOOTHED POINTS AND PRINT THEM OUT
120      C   WRITE(6,99)
121
122      XP=X1(1)
123      YP=A+B*XP
124      XOUT = XP - SHIFTX
125      YOUT = YP - SHIFTY
126
127      C   WRITE(6,98)XOUT,YOUT
128      XP=XP+DEIX
129      22 YP=A+B*XP
130      XOUT = XP - SHIFTX
131      YOUT = YP - SHIFTY
132
133      C   WRITE(6,98)XOUT,YOUT
134      XP=XP+DEIX
135      IF(XP.LT.X1(N))GO TO 22
136      C   IF((XP+0.0005).LT.X1(N))GO TO 22
137      YP=A+B*X1(N)
138      XOUT=X1(N)-SHIFTX
139      YOUT = YP - SHIFTY
140      C   YP=A+B*X1(N)
141      XOUT = XP - SHIFTX
142      C   YOUT = YP - SHIFTY
143
144      C   WRITE(6,98) XOUT,YOUT
145      GO TO 85
146      C   CALL PARAS
147
148      C *** PRINT CUT THE GENERATED POINTS AT THE ORIGINAL STEP SIZE
149
150      C   WRITE(6,97)
151      DC 31 I=1,N
152      YNEW=A+B*X1(I)+C*X1(I)*X1(I)
153      XNEW=X1(I)-SHIFTX
154      YNEW=YNEW-SHIFTY
155      WRITE(6,98)XNEW,YNEW
156      31 CONTINUE
157
158      C ** CALCULATE THE SMOOTHED POINTS AND PRINT THEM OUT
159      C   WRITE(6,99)
160
161      XP=X1(1)
162      YP=A+B*XP+C*XP*XP
163      XOUT = XP - SHIFTX
164      YOUT = YP - SHIFTY
165
166      C
167
168
169
170

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```

171      C      WRITE(6,98)XCLT,YOUT
172      C      XP=XP+DELX
173      32    YP=A*B*XP+C*XP*XP
174      C      XOUT = XP - SHIFTX
175      C      YOUT = YP - SHIFTY
176      C
177      C      WRITE(6,98)XOUT,YOUT
178      C      XP=XP+DELX
179      C      IF((XP+0.0005).LT.X1(N))GO TO 32
180      C      IF(XP.LT.X1(N))GO TO 32
181      C      YP=A*B*X1(N)+C*X1(N)*X1(N)
182      C      XOUT = XP - SHIFTX
183      C      YOUT = YP - SHIFTY
184      C      YP=A*B*X1(N)+C*X1(N)*X1(N)
185      C      XOUT=XP-SHIFTX
186      C      YOUT = YP - SHIFTY
187      C
188      C
189      C      WRITE(6,98) XOUT,YOUT
190      C      GO TO 85
191      C
192      C      4C CALL PCARS
193      C
194      C      *** PRINT OUT THE GENERATED POINTS AT THE ORIGINAL STEP SIZE
195      C
196      C      WRITE(6,97)
197      C      DO 41 I=1,N
198      C      YNEW=A*X1(I)**B
199      C      XNEW=X1(I)-SHIFTX
200      C      YNEW=YNEW-SHIFTY
201      C      WRITE(6,98)XNEW,YNEW
202      C
203      C      41 CONTINUE
204      C
205      C      ** CALCULATE THE SMOOTHED POINTS AND PRINT THEM OUT
206      C
207      C      WRITE(6,99)
208      C
209      C      XP=X1(1)
210      C      YP=A*XP**B
211      C      XOUT = XP - SHIFTX
212      C      YOUT = YP - SHIFTY
213      C
214      C
215      C      WRITE(6,98)XOUT,YOUT
216      C      XP=XP+DELX
217      42    YP=A*XP**B
218      C      XOUT = XP - SHIFTX
219      C      YOUT = YP - SHIFTY
220      C
221      C
222      C      WRITE(6,98)XCLT,YCLT
223      C      XP=XP+DELX
224      C      IF((XP+0.0005).LT.X1(N))GO TO 42
225      C      IF(XP.LT.X1(N))GO TO 42
226      C      YP=A*X1(N)**B
227      C      XOUT = XP - SHIFTX

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228      CC      YOUT = YP - SHIFTY
229      C      YP=A*X1(N)**B
230      C      XOUT=X1(N)-SHIFTX
231      C      YOUT = YP - SHIFTY
232      CC
233      CC
234      CC      WRITE(6,98)  XOUT,YOUT
235      C      GO TO 85
236      CC
237      C      50 CALL ASYMS
238      CC
239      CC*** PRINT OUT THE GENERATED POINTS AT THE ORIGINAL STEP SIZE
240      CC
241      C      WRITE(6,97)
242      C      DO 51 I=1,N
243      C      YNEW=A*X1(I)**B+C
244      C      XNEW=X1(I)-SHIFTX
245      C      YNEW=YNEW-SHIFTY
246      C      WRITE(6,98)XNEW,YNEW
247      C      51 CONTINUE
248      CC
249      CC*** CALCULATE THE SMOOTHED POINTS AND PRINT THEM OUT
250      CC
251      C      WRITE(6,99)
252      CC
253      C      XP=X1(1)
254      C      YP=A*XP**B+C
255      C      XOLT = XP - SHIFTX
256      C      YOUT = YP - SHIFTY
257      CC
258      CC
259      C      WRITE(6,98)XOUT,YOUT
260      C      XP=XP+CELEX
261      C      52  YP=A*XP**B+C
262      C      XOLT = XP - SHIFTX
263      C      YOUT = YP - SHIFTY
264      CC
265      CC
266      C      WRITE(6,98)XOUT,YOUT
267      C      XP=XP+CELEX
268      CC      IF ((XP+0.0005).LT.X1(N))GO TO 52
269      C      IF (XP.LT.X1(N))GO TO 52
270      CC      YP=A*X1(N)**B+C
271      CC      XOUT = XP - SHIFTX
272      C      YOUT = YP - SHIFTY
273      C      YP=A*X1(N)**B+C
274      C      XOUT=X1(N)-SHIFTX
275      C      YOUT = YP - SHIFTY
276      CC
277      CC
278      CC      WRITE(6,98)  XOUT,YOLT
279      C      GO TO 85
280      CC
281      C      60 CALL EXPOS
282      CC
283      CC*** PRINT OUT THE GENERATED POINTS AT THE ORIGINAL STEP SIZE
284      CC

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```

285      C      WRITE(6,97)
286      C      DO 61 I=1,N
287      C      YNEW=EXP(A+B*X1(I))
288      C      XNEW=X1(I)-SHIFTX
289      C      YNEW=YNEW-SHIFTY
290      C      WRITE(6,98)XNEW,YNEW
291      C      61 CONTINUE
292      C      C** CALCULATE THE SMOOTHED POINTS AND PRINT THEM OUT
293      C      C      WRITE(6,99)
294      C      C      XP=X1(1)
295      C      C      YP=EXP(A+B*XP)
296      C      C      XOUT = XP - SHIFTX
297      C      C      YOUT = YP - SHIFTY
298      C      C      WRITE(6,98)XCLT,YOUT
299      C      C      XP=XP+DELX
300      C      C      62 YP=EXP(A+B*XP)
301      C      C      XCLT = XP - SHIFTX
302      C      C      YOUT = YP - SHIFTY
303      C      C      WRITE(6,98)XOUT,YOUT
304      C      C      XP=XP+DELX
305      C      C      IF((XP+0.0005).LT.X1(N))GO TO 62
306      C      C      IF(XP.LT.X1(N))GO TO 62
307      C      C      YP=EXP(A+B*X1(N))
308      C      C      XOUT = XP - SHIFTX
309      C      C      YOUT = YP - SHIFTY
310      C      C      YP=EXP(A+B*X1(N))
311      C      C      XOUT=X1(N)-SHIFTX
312      C      C      YOUT = YP - SHIFTY
313      C      C      WRITE(6,98) XOUT,YOUT
314      C      C      GO TO 85
315      C      C      ** ADDITIONAL CURVE SUPPLIED BY USER CAN BE INSERTED HERE
316      C      C      70 IERR=1
317      C      C      RETURN
318      C      C      85 CALL PRINT
319      C      C      IF(IFUNC.ge.3)GO TO 120
320      C      C      A=A+B*SHIFTX+C*SHIFTX*SHIFTX
321      C      C      B=B+2*C*SHIFTX**2
322      C      C      120 WRITE(6,111) SHIFTX,SHIFTY,DELX,A,B,C
323      C      C      97 FORMAT('0',12X,'THE GENERATED POINTS AT THE ORIGINAL',
324      C      C      *' STEP SIZE ARE',//22X,'X',13X,'Y')
325      C      C      98 FORMAT(' ',12X,2F14.5)
326      C      C      99 FORMAT('0',12X,'THE GENERATED POINTS AT THE GIVEN',
327      C      C      *' STEP SIZE ARE',//22X,'X',13X,'Y')
328      C      C      111 FORMAT('0',12X,'SHIFTX',7X,'SHIFTY',4X,'DELX',6X,'A',1CX,
329      C      C      *'B',10X,'C',10X,6F10.4)
330      C      C

```

342

RETURN
END

8PRT,S SMEDEP.PRIN(C)

```

DB6-G03432*SMEDEP.PRIN(0)
1      SUBROUTINE PRINT
2      COMMCA/PLOTS/ X1(85),Y(85),X1L(85),YL(85),YC(85),YDEV(85),
3      *      YDSQ(5),H(3,3),T(3),S(12),VMEAN(3),
4      *      A,A1,E,B1,C,C1,AH,BH,CH,AN,AN1,AN2,SHIFTX,SHIFTY,
5      *      IEQ,KIV,NP,IERR,ISOLVE,NOTE,IFUNC,DELX,N,IXXY,IRR,IRI,JYES
6
7      C
8      IF(IFUNC.NE.0) GOTO 2
9      IFUNC=IEQ
10     2      GO TO (20,40,60,80,100),IEQ
11     20     WRITE(6,30)
12     30     FORMAT(1HO/,1X, 59HLINEAR REGRESSION -- Y = A + (B * X1) + (C *
13      & X2) + (D * X3) /)
14      RETURN
15     40     WRITE(6,50)
16     50     FORMAT(1HO/,15X,      52HPARABOLIC REGRESSION -- Y = A + (B * X) +
17      & (C * X**2) /)
18      RETURN
19     60     WRITE(6,70)
20     70     FORMAT(1HO/,15X, 55HPOWER REGRESSION -- Y = A * (X1**B) * (X2**C)
21      & * (X3**D) /)
22      RETURN
23     80     WRITE(6,90)
24     90     FORMAT(1HO/,15X, 51HASYMPTOTIC-POWER REGRESSION -- Y = (A * (X**B
25      &)) + C /)
26      RETURN
27     100    WRITE(6,110)
28     110    FORMAT(1HO/,
29      &(B * X)) /)
30      RETURN
31      END

```

SPRT,S SMEDEP.BUILD(0)

```

CB6-603432*SMEDEF.BUILD(C)
1      SUBROUTINE BUILD
2      COMMON/ABUF/IF,IFD,ISIF,IFETC(100,9),GOT(500,3),IEND,IENDG
3      COMMON/BBUF/RREC(180),V(160),VSLOP(261),ID(60)
4      COMMON/PLOTS/X1(85),Y(85),XIL(85),YL(85),YC(85),YCEV(85),
5      &RNARA(46),
6      *      IEQ,NIV,NP,IERR,ISOLVE,NOTE,ITP,DELX,NM,IY,IRR,IRI,JYES
7      COMMON/PLTI/XX2(170),X22(100),RXX(2),NG
8      COMMON/NAMS/IDX,IDX,IZZZ,MNV,MNC
9      COMMON/MP/ICO
10     DIMENSION XARA(85),YARA(85),YAR1(85),XT(85),YT(85)
11     DIMENSION B(100)
12     DATA JYES/'Y',
13     NG=50
14     DELX=1.
15     CALL NEWPAG
16     WRITE(6,98)
17     98 FORMAT(*, 'DC YOU WISH INSTRUCTIONS?')
18     988 READ(5,97,ERR=988)INS
19     97 FORMAT(A4)
20     IF(INS.NE.JYES)GO TO 96
21     WRITE(6,95)
22     95 FORMAT(*, 'THIS COMMAND ALLOWS THE USER TO PERFORM THE',
23     & ' FOLLOWING FUNCTIONS UPON THE DATA',/, ' 1 IGNORE DATA POINTS',/,
24     $ ' 2 LINEAR REGRESSION',/, ' 3 PARABOLIC REGRESSION',/,
25     $ ' 4 POWER REGRESSION',/, ' 5 ASYMPTOTIC-POWER REGRESSION',/,
26     $ ' 6 EXPONENTIAL REGRESSION',/, ' 7 TEST OF SIGNIFICANCE BETWEEN',
27     $ ' 8 TEST OF SIGNIFICANCE BETWEEN MEANS',/,
28     $ ' 9 AUTO CORRELATION & CROSS CORRELATION ANALYSIS',/
29     & ' 9 STOP')
30     96 CONTINUE
31     WRITE(6,94)
32     94 FORMAT(*, 'SPECIFY BUILD FUNCTION')
33     READ(5,993,ERR=93)IFUN
34     993 FORMAT(I1)
35     IF(IFUN.LT.1.OR.IFUN.GT.9)GO TO 96
36     IFTEST=IFUN-3
37     GO TO (92,91,91,91,91,91,90,89,111),IFLN
38     92 CALL IGNORE
39     GO TO 96
40     91 ITP=IFUN-1
41     IF(ITP.LE.2)GO TO 99
42     WRITE(6,477)
43     477 FORMAT(*, 'ERROR IN BUILD FUNCTION TRY AGAIN')
44     GO TO 93
45     99 IEQ=ITP
46     ICO=0
47     INFG=1
48     WRITE(6,87)
49     87 FORMAT(*, 'DO YOU WISH TO USE TIME AS THE INDEPENDENT VAR?')
50     READ(5,97,ERR=86)IY
51     IF(IY.NE.JYES)GO TO 85
52     WRITE(6,84)
53     84 FORMAT(*, 'INPUT IDEN (A6)')
54     READ(5,82,ERR=83)IDNT
55     82 FORMAT(A6)
56     DO 15 I = 1,IF

```

```

57
58      IRR = I
59      IF(IFETC(I,2) .EQ. IDNT) GO TO 20
60      CONTINUE
61      WRITE(6,16) ICNT
62      16 FORMAT(' DO NOT RECOGNIZE ',A6,'. TRY AGAIN.')
63      CONTINUE
64      IR=IFETC(IRR,8)
65      NM=IFETC(IRR,9)
66      WRITE(6,1991)
67      1991 FORMAT(' DO YOU WISH COMPLETE TABULAR CUTPLT ?')
68      READ(5,97)INS
69      IF(INS.EQ.JYES)GO TO 1000
70      DO 81 I=1,NM
71      CALL TIMPRT(GCT(IR,1),NDI,NH,LN,NS)
72      XNDI=NDI
73      CALL PLOT(XNDI,GOT(IR,2),ITP)
74      C 788 WRITE(6,788)NM,XNDI,GOT(IR,2)
75      C 788 FORMAT(' ',I5,2F12.5)
76      IRE=GCT(IR,3)
77      81 CONTINUE
78      1000 CONTINUE
79      DO 88 I=1,NM
80      CALL TIMPRT(GCT(IR,1),NDI,NH,LN,NS)
81      X1(I)=NDI
82      C 788 Y(I)=GCT(IR,2)
83      C 788 WRITE(6,788)NM,XNDI,GOT(IR,2)
84      C 788 FORMAT(' ',I5,2F12.5)
85      IF (GOT(IR,3).GT.0.) GO TO 288
86      IR=IR+1
87      GO TO 88
88      288 IR=GCT(IR,3)
89      88 CONTINUE
90      CALL RSUM2
91      DO 754 I=1,NG
92      X2Z(I)=X2Z(I)*1440.
93      WNV=(MNV+2)/2
94      1999 WRITE(6,1099)LNV
95      1099 FORMAT(' NAME OF NEW VARIABLE IN LOC',F4.0,/' IDEN')
96      READ(5,82)NIDN
97      DO 1008 I=1,IF
98      IF(IFETC(I,2).EQ.NIDN)GO TO 1010
99      IFX=IF+1
100     IF(IFX.GT.IEND)GO TO 1111
101     IF=IF+1
102     IFETC(IF,1)=LNV
103     IFETC(IF,2)=NIDN
104     IFETC(IF,6)=16
105     IFETC(IF,7)=XZZ(1)*60
106     IFETC(IF,8)=XZZ(NG)*60
107     IFETC(IF,9)=NG
108     IF(ITP.EQ.1)IFETC(IF,8)=XZZ(2)*60
109     IF(ITP.EQ.1)IFETC(IF,9)=2
110     GO TO 1110
111     1010 WRITE(6,1101)
112     1101 FCRMAT(' DUPLICATE IDENS TRY AGAIN')
113     1111 GO TO 1999
114     1111 WRITE(6,1112)

```

```

114 1112 FORMAT(* FETCH ARRAY FULL MUST DO A SCRCH*)
115 CALL RETREV
116 111C IF(MAV.LE.0)GO TO 1001
117 REWIND 16
118 REWIND 18
119 IF(IFETC(IF,9).GT.MNC)MWF=1
120 WRITE (16)WNV
121 READ (18)WNV
122 DO 1002 MM=1,MNC
123 READ(18)(B(I),I=1,MNV)
124 WRITE(16)(B(I),I=1,MNV),XZZ(MM),XZZ(MM+NG)
125 WRITE(6,767)(E(I),I=1,MNV),XZZ(MM),XZZ(MM+NG)
126 C767 FORMAT(1H ,6F10.1)
127 1002 CONTINUE
128 IF(NWF.NE.1)GO TO 7471
129 MNCD=IFETC(IF,9)-MNC
130 DO 474 IM=1,MNCD
131 474 WRITE(16)(B(I),I=1,MNV),XZZ(MM),XZZ(MM+NG)
132 MNC=IFETC(IF,9)
133 MWF=0
134 7471 CONTINUE
135 ENDFILE 16
136 REWIND 16
137 REWIND 18
138 MNV=(MNV+2)/2
139 WRITE (18)WNV
140 READ(16)WNV
141 MNV=MNV+2
142 DO 1003 MM=1,MNC
143 READ(16)(B(I),I=1,MNV)
144 WRITE(18)(B(I),I=1,MNV)
145 1003 CONTINUE
146 ENDFILE 18
147 GO TO 1005
148 1001 MNC=IFETC(IF,9)
149 MNV=2
150 WNV=MNV/2
151 WRITE(18)WNV,WNV,WNV,WNV
152 WRITE(16)WNV,WNV,WNV,WNV
153 DO 1004 I=1,MNC
154 WRITE(16)XZZ(I),XZZ(I+NG)
155 C WRITE(6,765)XZZ(I),XZZ(I+NG)
156 C765 FORMAT(* X*,6F10.1)
157 1004 WRITE(18)XZZ(I),XZZ(I+NG)
158 ENDFILE 16
159 ENDFILE 18
160 1005 CONTINUE
161 REWIND 16
162 REWIND 18
163 GO TO 96
164 85 IDFG=0
165 WRITE(6,10C)
166 10C FORMAT(1X,'VAR 1',5X,'VAR 2',/1X,'IDEN',2X,'IDEN')
167 102 READ(5,101,ERR=102)IDX,IDX
168 101 FORMAT(2A6)
169 104 IDNT=IDX
170 IF(ILFE.EQ.1)ICAT=IDY

```

```

171      IRI=IRR
172      00 17 I = 1, IF
173      IRR = I
174      IF(IFETC(I,2) .EQ. IDNT) GO TO 103
175      17 CONTINUE
176      WRITE(6,16) IDNT
177      GO TO 85
178      103 CONTINUE
179      IDFG=IDFG+1
180      IF(IDFG.EQ.1)GO TO 104
181      IRX=IFETC(IRI,8)
182      IRY=IFETC(IRR,8)
183      NX=IFETC(IRI,9)
184      NY=IFETC(IRR,9)
185      DO 107 I=1,NX
186      CALL TIMPR1(ECT(IRX,1),NDIX,NH,LV,NS)
187      JXT(I)=NDIX
188      XARA(I)=GOT(IRX,2)
189      IF (GOT(IRX,3).GT.0.) GO TO 113
190      IRX=IRX+1
191      GO TO 107
192      113 IRX=GOT(IRX,3)
193      107 CONTINUE
194      DO 109 I=1,NY
195      CALL TIMPR1(GOT(IRY,1),NDIY,NH,LV,NS)
196      JYT(I)=NDIY
197      YARI(I)=GOT(IRY,2)
198      IF (GOT(IRY,3).GT.0.) GO TO 114
199      IRY=IRY+1
200      GO TO 109
201      114 IRY=GOT(IRY,3)
202      109 CONTINUE
203      IF(INFG.GT.3.CR.INFG.LT.1)WRITE(6,666)INFG
204      666 FORMAT(' BUIL 96 INFG= ',I5)
205      GO TO(125,120,122),INFG
206      C IF(INFG.EQ.2)GO TO 120
207      125 MM=1
208      DO 105 I=1,NX
209      DO 105 J=1,NY
210      IF(JXT(I).EQ.JYT(J))GO TO 106
211      GO TO 105
212      106 XARA(MM)=XARA(I)
213      YARA(MM)=YARI(J)
214      MM=MM+1
215      105 CONTINUE
216      NM=MM-1
217      DO 108 I=1,NM
218      CALL PLCT(XARA(I),YARA(I),ITP)
219      108 CONTINUE
220      GO TO 96
221      90 INFG=2
222      GO TO 85
223      120 CONTINUE
224      DAV=C.
225      INFG=1
226      CALL SIGDMN(XARA,NX,YARI,NY,DAV,U1,S1,U2,S2,T,ETA,NDF)
227      WRITE(6,121)ICX, IDY, U1, U2, S1, S2, T, ETA, NDF

```

```

228 121 FORMAT(' ',5X,A6,10X,A6,'/2X' MEAN=' ,F7.2,9X,'MEAN=' ,F7.2,5X,
229      $/3X,' SD=' ,F7.2,11X,'SD=' ,F7.2,' T STATISTIC=' ,F5.2,4X,
230      &'WITH PROBABILITY=' ,F7.5,' DEGREES OF FREEDOM=' ,I2)
231      GO TO 96
232 C 89  WRITE(6,158)
233 C 158 FORMAT(' THIS FUNCTION IS NOT BUILT YET')
234     89  INFG=3
235     GO TO 85
236 122 CONTINUE
237     DAV=0.
238     INFG=1
239     CALL SIGDMN(XARA,NX,YARI,NY,DAV,U1,S1,L2,S2,T,ETA,NDF)
240     WRITE(6,123)ICX,IDX,T,ETA,NDF
241 123 FORMAT('0',20X,'T STATISTIC BETWEEN MEANS',/,'5X,'(',
242      '&A6,'),('A6,'),5X,'T=' ,F5.2,2X,'PROB=' ,F7.5,2X,'NDF=' ,I2)
243      GO TO 96
244 111 LFLAG=99
245     CALL RETREV(LFLAG)
246     RETURN
247     END

```

APRT,S SMEDEP.IGNORE(0)

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DB6-G03432*SMEDEP. IGNORE(0)
1      SUBROUTINE IGNORE
2      COMMON/ABUF/IF,IFD,ISIF,IFETC(100,9),GOT(500,3)
3      DIMENSION IIN(16),R(4,4)
4      DATA IG0C/*GC */,IBLK/* */
5      CALL NEWPAG
6      WRITE(6,10)
7      10 FORMAT(' INPUT IDEN AND UP TO 4 TIMES OF DATA TO IGNORE*'
8      11 /* INPUT GO WHEN FINISHED IGNORE INPUT.*/
9      12 /* IDEN ',4(' DAY HR MN SE')')
10     13 READ(5,12,ERR=9) I2,(IIN(I),I=1,16)
11     14 FORMAT(A6,4(2X,A5,A2,1X,A2,1X,A2))
12     15 IF(I2.EQ. IG(0) RETURN
13     16 DO 15 I = 1,IF
14     17 IRR = I
15     18 IF(IFETC(I,2) .EQ. I2) GC TC 20
16     19 CONTINUE
17     20 WRITE(6,16) I2
18     21 FORMAT(' DO NOT RECOGNIZE ',A6,'. TRY AGAIN.')
19     22 GO TO 11
20     23 IF(IFETC(IRR,6) .LE. 12) GO TO 23
21     24 WRITE(6,22)
22     25 FORMAT(' IGNORE ILLEGAL FOR DATA FROM MODELS.')
23     26 GO TC 11
24     27 23 DECODE(96,25,IIN(1),I1) ((R(I2,I3),I2=1,4),I3=1,4)
25     28 FORMAT(4(F5.0,1X,3(F2.0,4X)))
26
27      C
28      29 DO 40 I = 1,4
29      30 I3 = ((I - 1) * 4) + 1
30      31 I4 = I3 + 3
31      32 DO 100 I2 = I3,I4
32      33 IF(IIN(I2) .NE. IBLK) GO TO 102
33      34 CONTINUE
34      35 GO TO 11
35      36 102 T = (R(1,I)*1440.) + (R(2,I)*60.) + R(3,I) +
36      37 1 (R(4,I)/60.)
37      38 INC = IFETC(IRR,9)
38      39 IG = IFETC(IRR,8)
39      40 IGO = IG
40      41 X = ABS(GOT(IG,1) - T)
41      42 IF(X .LT. .02) GO TO 30
42      43 IF(GOT(IG,1) .GT. T) GO TO 105
43      44 IGC = IG
44      45 IG = GCT(IG,3)
45      46 IND = IND - 1
46      47 IF(IND .GT. 0) GO TO 29
47      48 105 WRITE(6,32) (R(J,I),J=1,4)
48      49 32 FORMAT(' NO DATA ASSOCIATED WITH ',F6.0,'D',F5.0,'E',
49      50 1 F5.0,'M',F5.0,'S')
50      51 30 IFETC(IRR,9) = IFETC(IRR,9) - 1
51      52 IF(IFETC(IRR,9) .GT. 0) GO TO 33
52      53 IFETC(IRR,8) = -268435456
53      54 GO TO 38
54      55 33 IF(IGO .EQ. IG) IFETC(IRR,8) = GOT(IG,3)
55      56 IF(IGO .NE. IG) GOT(IGO,3) = GOT(IG,3)
56      38 GOT(IG,1) = -999990C.

```

57 4C CONTINLE
58 GO TO 11
59 END

6PRT,S SMEDEP.TPLT(0)

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DB6-G03432*SMEDEP.TPLT(0)
1      SUBROUTINE PLCT(XIN,YIN,ITYPE)
2      COMMON/PLOTS/ X1(85),Y(85),X1L(85),YL(85),YC(85),YDEV(85),
3      *          YDSQ(5),H(3,3),T(3),S(12),VMEAN(3),
4      *          A,A1,B,B1,C,C1,AH,BH,CH,AN,AN1,AN2,SHIFTX,SHIFTY,
5      *          IEQ,RIV,NP,IERR,ISOLVE,NCTE,IFLNC,DELX,N,IXXY,IRR,IRI,JYES
6      COMMON/MP/ICO
7
8      CC  WRITE(6,6789)IFUNC,N,DELX
9      6789 FORMAT(1H ,2I5,F10.4)
10     DELX=1.
11     IEQ=IFLNC
12
13     C      IF(IFUNC.NE.C) GOTO 2
14     IF(N.EQ.0)  GOTO 1
15     WRITE(6,444) N,IEQ
16     444 FORMAT(' ',12X,'TEST OF',I4,' POINTS ON CLRVE',I4)
17     WRITE(6,555)
18     555 FORMAT('0',12X,'THE ORIGINAL GIVEN POINTS ARE',//22X,
19     *'X',13X,'Y')
20     WRITE(6,666)(X1(I),Y(I),I=1,N)
21     666 FORMAT(' ',12X,2F14.5)
22     CALL SUMSS
23     WRITE(6,777)
24     777 FORMAT('0',12X,'THE ABOVE SET IS TERMINATED BY A ZERO',
25     *' IFUNC CALL',//1')
26
27     CC *** IFLNC = 0 MERELY PASS THE PEN COMMAND
28     CONTINUE
29
30     CC  WRITE(6,999) XIN,YIN,ITYPE
31     999 FORMAT('0',12X,'POINT PASSED BY A IFUNC = C CALL',//0',
32     *22X,'X',13X,'Y',4X,'PEN COMMAND',//0',12X,2F14.5,I7//1')
33     RETURN
34
35     C      2 IF(N.EC.0) GOTO 4
36     IF(IEQ.NE.IFUNC) GOTO 6
37     4 ICO=ICO+1
38     X1(ICO)=XIN
39     Y(ICO)=YIN
40     IF(ICO.NE.N) RETURN
41     CALL PRINT
42
43     CC  WRITE(6,444)N,IEQ
44     WRITE(6,555)
45     WRITE(6,666)(X1(I),Y(I),I=1,N)
46     CALL SUMSS
47     RETURN
48     6 IF(N.EC.1) GOTO 8
49
50     CC *** NLESS THAN 50
51
52     CC  WRITE(6,444)N,IEQ
53     WRITE(6,555)
54     WRITE(6,666)(X1(I),Y(I),I=1,N)
55     CALL SUMSS
56

```

```
57      WRITE(6,888)
58 888 FORMAT('0',12X,'ONE JOB IS DONE, READY FOR NEXT.'//)
59      N=1
60      IEC=IFLAC
61      X1(1)=XIN
62      Y1(1)=YIN
63      RETURN
64
65  C *** ERROR MESSAGE
66  C
67      8 IERR=1
68      WRITE(6,11)
69 11 FORMAT('0' ' GIVEN ONE POINT ONLY, NO CLRVE CAN BE GENERATED')
70      RETURN
71      END
```

```
6PRT,S  SMEDEP.REGRESS(0)
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DB6-G03432*SMEDEP. REGRESS(0)
1      SUBROUTINE REGRES
2      COMMON/ABUF/IF,IFD,ISIF,IFETC(1CC,9),GCT(5CC,3),IEAC,IEACG
3      COMMON/BBUF/RREC(18G),V(160),VSLCP(261),ID(6G)
4      COMMON/PLOTS/ X1(85),Y(85),X1L(85),YL(85),YC(85),YDEV(85),
5      *      YDSQ(5),H(3,3),T(3),S(12),VMEAN(3),
6      *      A,A1,B,B1,C,C1,AH,BH,CH,AN,AN1,AN2,SHIFTX,SHIFTY,
7      *      IEQ,IV,IV,MP,IERR,ISOLVE,NCTE,ITP,DELX,NM,IY,IRR,IRI,JYES
8      COMMON/PLTI/XXZ(170),XZZ(100),RXX(2),RG
9      COMMON/NAMS/IDX,IDO,IZZZ,MNV,MNC
10     DIMENSION XARA(85),YARI(85),JXT(85),JYT(85)
11     DATA JYES/'Y  ',IDAYT/'DAYS',IBLK/,/
12     NG=50
13     CALL NEWPAG
14     IF(INS.NE.0) GO TO 7655
15     WRITE(6,98)
16     98 FORMAT('DC YOU WISH INSTRUCTIONS?')
17     988 READ(5,97,ERR=988)INS
18     97  FFORMAT(A4)
19     7655 CONTINUE
20     IF(INS.NE.JYES)GO TO 96
21     WRITE(6,95)
22     95 FORMAT('THIS COMMAND ALLOWS THE USER TO PERFORM THE ',
23     // ' FOLLOWING REGRESSION FUNCTIONS UPON THE DATA',//,
24     '$ 1 LINEAR REGRESSION',// '$ 2 PARABOLIC REGRESSION',//,
25     '$ 3 POWER REGRESSION',// '$ 4 ASYMPTOTIC-POWER REGRESSION',//,
26     '$ 5 EXPONENTIAL REGRESSION',// '$ 6 STOP')
27     '$ 6 STOP')
28     96 CONTINUE
29     WRITE(6,94)
30     94 FORMAT('SPECIFY REGRESSION FUNCTION')
31     93 READ(5,993,ERR=93)IFUN
32     993 FORMAT(I1)
33     IF(IFUN.LT.1.OR.IFUN.GT.6)GO TO 96
34     IFTEST=IFUN-2
35     IF(IFTEST.LE.0)GO TO 426
36     GO TO (99,99,99,111),IFTEST
37     426 IEQ=IFUN
38     IF(IFUN.EQ.6)GO TO 111
39     91 ITP=IFUN
40     91  ICC=C
41     WRITE(6,87)
42     87 FORMAT('DO YOU WISH TO USE TIME AS THE INDEPENDENT VAR?')
43     86 READ(5,97,ERR=86)IY
44     IF(IY.NE.JYES)GO TO 85
45     WRITE(6,84)
46     84 FORMAT('INPUT IDEN (A6)')
47     83 READ(5,82,ERR=83)IDNT
48     82 FORMAT(A6)
49     82  IDY=IDNT
50     DC 15 I = 1,IF
51     IRR = I
52     IF(IFETC(I,2) .EQ. IDNT) GO TO 20
53     15 CONTINUE
54     9  WRITE(6,16) IDNT
55     16 FORMAT('DO NOT RECOGNIZE ',A6,'. TRY AGAIN.')
56     GO TO 83

```

```

57      99  WRITE(6,427)
58      427 FORMAT(1$' ERROR IN FUNCTION TRY AGAIN')
59      GO TO 93
60      20  CONTINUE
61      IR=IFETC(IRR,8)
62      NM=IFETC(IRR,9)
63      DO 81 I=1,NM
64      CALL TIMPRT(GCT(IR,1),NDI,NH,LN,NS)
65      X1(I)=NDI
66      Y(I)=GOT(IR,2)
67      C 788 WRITE(6,788)NM,XNDI,GCT(IR,2)
68      FORMAT(1$' ,I5,2F12.5)
69      IF (GOT(IR,3).GT.0.) GO TO 80
70      IR=IR+1
71      GO TO 81
72      80  IR=GCT(IR,3)
73      81  CONTINUE
74      IDX=IDAYT
75      CALL RSUM1
76      DO 678 I=1,NM
77      C678 WRITE(6,679)XXZ(I),XXZ(85+I),IRR,IRI
78      C679 FORMAT(1H ,2F10.4,2I5)
79      C  WRITE(6,888)XZZ(1),XZZ(51)
80      C  WRITE(6,888)XZZ(50),XZZ(100)
81      C888 FORMAT(1$' ,2F10.5)
82      CALL PLOT33
83      GO TO 96
84      85  IDFG=0
85      WRITE(6,100)
86      100 FORMAT(IX,'XAXIS',5X,'YAXIS',/IX,'IDEN',2X,'IDEN')
87      102 READ(5,101,ERR=102)IDX,IDY
88      101 FORMAT(2A6)
89      104 ICNT=IEY
90      IF(ICFE.EQ.1)ICNT=IDY
91      IRI=IRR
92      DO 17 I = 1,IF
93      IRR = I
94      IF(IFETC(I,2) .EQ. ICNT) GO TO 103
95      17  CONTINUE
96      WRITE(6,16) ICNT
97      GO TO 85
98      103 CONTINUE
99      IDFG=IDFG+1
100     IF(ICFE.EQ.1)EC TC 104
101     IRX=IFETC(IRI,8)
102     IRY=IFETC(IRR,8)
103     NX=IFETC(IRI,9)
104     NY=IFETC(IRR,9)
105     DO 107 I=1,NX
106     CALL TIMPRT(GCT(IRX,1),NDIX,NH,LN,NS)
107     JXT(I)=NDIX
108     XARA(I)=GOT(IRX,2)
109     IF (GOT(IRX,3).GT.0.) GO TO 113
110     IRX=IRX+1
111     GO TO 107
112     113 IRX=GOT(IRX,3)
113     107 CONTINUE

```

```
114      DO 109 I=1,NY
115      CALL TIMPRT(GCT(IRY,1),NDIY,NF,LN,RS)
116      JYT(I)=NDIY
117      YAR1(I)=GOT(IRY,2)
118      IF (GOT(IRY,3).GT.0.) GO TO 114
119      IRY=IRY+1
120      GO TO 109
121 114  IRY=GOT(IRY,3)
122 109  CONTINUE
123      MM=1
124      DO 105 I=1,NX
125      DO 105 J=1,NY
126      IF (JXT(I).EQ..YT(.)) GO TO 106
127      GO TO 105
128 106  X1(MM)=XARA(I)
129      Y(MM)=YAR1(J)
130      MM=MM+1
131 105  CONTINUE
132      NM=MM-1
133      CALL RSUM1
134      CALL PLOT33
135      GO TO 96
136 111  CALL RETREV
137      RETURN
138      END
```

6PRT,S SMEDEP.RSUM1(0)

```

DB6-603432*SMEDEP.RSUM1(0)
1      SUBROUTINE RSUM1
2      COMMON/PLOTS/ X1(85),Y(85),X1L(85),YL(85),YC(85),YDEV(85),
3      *      YDSQ(5),H(3,3),T(3),S(12),VMEAN(3),
4      *      A,A1,B,B1,C,C1,AH,BH,CH,AN,AN1,AN2,SHIFTX,SHIFTY,
5      *      IEQ,NIV,NP,IERR,ISOLVE,NOTE,IFUNC,DELX,N,IXXY,IRR,IRI,JYES
6      COMMON/PLTI/XXZ(170),X2Z(100),SMY,YFI,AC,RVAL
7      C      SUBROUTINE FOR ORDERING DATA AND OBTAINING VARIOUS SUMS AND
8      C      STANDARD DEVIATIONS OF INPUT DATA
9
10     C      ** CLEAR COMMON BLOCK
11
12     C      ISCLVE=0
13     C      NOTE=0
14     C      IERR=0
15     C      NG=50
16     C      DO 1 I=171,556
17     1 X1(I)=C.
18
19     C      ** FIND THE SMALLEST Y
20
21     C      YHI=Y(1)
22     C      SMY=Y(1)
23     C      DO 3 J=2,N
24     C      IF (SMY.LE.Y(J)) GOTO 3
25     C      SMY=Y(J)
26     3 CONTINUE
27     C      DO 33 J=2,N
28     C      IF (YHI.GE.Y(J)) GOTO 33
29     C      YHI=Y(J)
30     33 CONTINUE
31
32     C      ORDER THE DATA FROM LOW TO HIGH VALUES OF X.
33     C      NK=N-1
34     C      DO 9 I=1,NK
35     C      IN=I+1
36     C      DO 8 J=IN,N
37     C      IF (X1(I).LE.X1(J)) GOTO 8
38     C      TEMP=X1(I)
39     C      X1(I)=X1(J)
40     C      X1(J)=TEMP
41     C      TEMP=Y(I)
42     C      Y(I)=Y(J)
43     C      Y(J)=TEMP
44     8 CONTINUE
45     9 CONTINUE
46
47     C      DO 132 I=1,85
48     C      XXZ(I)=X1(I)
49     C      XXZ(85+I)=Y(I)
50     C      C577 WRITE(6,577)XXZ(I),XXZ(85+I)
51     C      FORMAT(1H ,2(F10.5,5X))
52     132 CONTINUE
53     C      IF (SMY.GT.0.C) GO TO 5
54     C      SHIFTY=(1.0-SMY)
55
56     C      ** SHIFTING THE Y-AXIS

```

```

57      C
58      DO 4 K=1,N
59      Y(K)=Y(K)+SHIFTY
60      4 CONTINUE
61      GO TO 6
62      5 SHIFTY=0.0
63      C
64      6 IF(X1(1).GT.C.0)GO TO 11
65      SHIFTX=(1.0-X1(1))
66      C
67      ** SHIFTING THE X-AXIS
68      C
69      DO 10 K=1,N
70      X1(K)=X1(K)+SHIFTX
71      10 CONTINUE
72      GO TO 12
73      11 SHIFTX=0.0
74      C
75      12 NIV=1
76      NP=2
77      IF(IEQ.EQ.2.OR.IEQ.EQ.4) NP=NP+1
78      AN=FLOAT(N)
79      C
80      OBTAIN VARIOUS SUMS OF INPUT DATA.
81      DO 13 I=1,N
82      YL(I)= ALOG(Y(I))
83      X1L(I)= ALOG(X1(I))
84      X1SQ=X1(I)*X1(I)
85      YSQ=YSC+Y(I)*Y(I)
86      S(1)=S(1)+Y(I)
87      S(2)=S(2)+X1(I)
88      S(3)=S(3)+X1SQ
89      S(4)=S(4)+(X1(I)*Y(I))
90      RVAL=(N*S(4)-S(1)*S(2))/((N*S(3)-S(2)*S(2))*(N*YSQ-S(1)*S(1)))**.5
91      C1C01 WRITE(6,1001)RVAL
92      FORMAT(' R= ',F10.5)
93      IF(IEQ.EQ.1)GO TO 13
94      S(5)=S(5)+YL(I)
95      S(6)=S(6)+X1L(I)
96      S(7)=S(7)+(X1(I)*YL(I))
97      IF(IEQ.NE.2)GO TO 13
98      S(8)=S(8)+(X1L(I)*X1L(I))
99      S(9)=S(9)+(X1SQ*X1(I))
100     S(10)=S(10)+(X1SQ*X1SQ)
101     S(11)=S(11)+(X1SQ*Y(I))
102     13 CONTINUE
103     C
104     CALCULATE MEANS OF INPUT DATA.
105     DO 14 J=1,2
106     VMEAN(J)=S(J)/AN
107     14 CONTINUE
108     C
109     CALCULATE SUMS OF THE INPUT DATA ABELT THEIR MEANS.
110     DO 15 K=1,N
111     S(12)=S(12)+(Y(K)-VMEAN(1))**2
112     15 CONTINUE
113     C
114     XDIF=(X1(N)-X1(1))/NG

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```

114      C
115      IF (IEQ.GE.1.AND.IEQ.LE.6)GO TO 533
116      WRITE(6,532)
117      532 FORMAT(1H , ' ERROR N IEQ')
118      RETURN
119      533 GO TO (20,30,70,70,70,70),IEQ
120      20 CALL LINES
121      XP=X1(1)
122      DO 21 I=1,NG
123      XZZ(I)=XP-SHIFTX
124      XZZ(NG+I)=(A+E*XP)-SHIFTY
125      XP=XP+XDIF
126      21 CONTINUE
127      RETURN
128      30 CALL PARAS
129      XP=X1(1)
130      DO 31 I=1,NG
131      XZZ(I)=XP-SHIFTX
132      XZZ(NG+I)=A+B*XP+C*XP*XP-SHIFTY
133      XP=XP+XDIF
134      31 CONTINUE
135      RETURN
136      C 40 CALL PCWRS
137      XP=X1(1)
138      DO 41 I=1,NG
139      XZZ(I)=XP-SHIFTX
140      XZZ(NG+I)=A*XP**B-SHIFTY
141      XP=XP+XDIF
142      41 CONTINUE
143      RETURN
144      C 50 CALL ASYMS
145      XP=X1(1)
146      DO 51 I=1,NG
147      XZZ(I)=XP-SHIFTX
148      XZZ(NG+I)=A*XP**B+C-SHIFTY
149      XP=XP+XDIF
150      51 CONTINUE
151      RETURN
152      C 60 CALL EXPOS
153      XP=X1(1)
154      DO 61 I=1,NG
155      XZZ(I)=XP-SHIFTX
156      XZZ(NG+I)=EXP(A+B*XP)-SHIFTY
157      XP=XP+XDIF
158      61 CONTINUE
159      RETURN
160      70 IERR=1
161      RETURN
162      END

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DB6-G03432*SMEDEP.PLOT26(0)
1      SUBROUTINE PLOT26
2      COMM CN/ABUF/IF,IFD,ISIF,IFETC(100,9),GCT(500,3)
3      DIMENSION XX(17)
4      COMM CN/BBUF/B(601)
5      DATA IGO/*GO */,ISAM/'SAME'/
6      DIMENSION TSTEPX(4),TSTALP(4)
7      DATA TSTEPX/.01666667,1.,60.,144C./
8      DATA TSTALP/'SECS','MINS','HOUR','DAYS'/
9      COMM CN/SEG22/IIDAS(6,2),PPARS(6,9),TTSPT,ICUP,NOP,I3Y
10     1,K,RUASTP,JFF,R1
11     DIMENSION XNO(5),HEAD(15)
12     CALL NEWPAG
13     WRITE(6,600)
14     600 FORMAT(' INPUT HEADING WANTED. (15A4)')
15     READ(5,601,ERR=602) (HEAD(I),I=1,15)
16     601 FORMAT(15A4)
17     WRITE(6,610)
18     610 FORMAT(' (IDEN=DATA IDEN,SAME,GO) (L=1..6. FOR LOG.)',
19     ' (P,1.=STAIR PLT 1ST.PT.HORIZ,2.=STAIR 2ND.PT.HORIZ,,',
20     ' 3.=NO LINES,OR PT.TO PT.PLT.)',
21     ' (X=1.FOR X SYMBOL AT EACH POINT)'
22     ' (START/STOP LEFT BLANK MEANS',
23     ' PLOT ALL TIME OF DATA)',
24     ' ,28X,14(*.*),X AXIS (TIME),14(*.*)/
25     ' ,7(*.*),Y AXIS,.8(*.*),7X,---START,---,---,',
26     ' STOP---,---BIAS---/';IDEN HIGH,3X,LOW,',
27     ' 4X,,L P X ,3(* DAY HR MN SE'))
28     KKCP = C
29     KK = 1
30     ISJ = C
31     READ(5,6,ERR=501) I2,(XX(I1),I1=1,4),XX(17),(XX(I1),I1=5,16)
32     FORMAT(A6,1X,2F7.3,2F2.0,F3.0,3(F5.0,3F3.0))
33     IF(KK .EQ. 1 .AND. I2 .EQ. ISAM) GO TO 10
34     IF(KK .GT. 1 .AND. I2 .EQ. IGO) GO TO 25
35     IF(KK .GT. 6) GO TO 728
36     DC 210 J = 1,IF
37     J1 = J
38     IF(I2 .EQ. IFETC(J,2)) GO TO 13
39     210 CONTINUE
40     ISJ = 1
41     GO TO 501
42     13 IF(IFETC(J1,9) .LT. 2) GO TO 5
43     IF(IFETC(J1,6) .GT. 12) GO TO 20
44     IF(IFETC(J1,8) .NE. -268435456) GO TO 20
45     5 WRITE(6,9) I2
46     9 FORMAT(' ONE OR LESS DATA FOR ',A6)
47     GO TO 7
48     20 ISJ = 2
49     IF(XX(2) .GE. XX(1)) GO TO 501
50     ISJ = 4
51     IF(XX(3) .LT. 1. .OR. XX(3) .GT. 6.) GO TO 501
52     ISJ = 5
53     IF(XX(4) .LT. 0. .OR. XX(4) .GT. 3.) GO TO 501
54     TB = (XX(13)*1440.) + (XX(14)*60.) + XX(15) +
55     1 (XX(16)/60.)
56     T1 = (XX(5)*1440.) + (XX(6)*60.) + XX(7) +

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57      1 (XX(8)/60.)
58      1 T2 = (XX(9)*1440.) + (XX(10)*60.) + XX(11) +
59      1 (XX(12)/60.)
60      IF(T1 .EQ. 0. .AND. T2 .EQ. 0.) GO TO 506
61      IF(T2 .GT. T1) GO TO 506
62      WRITE(6,503)
63 503  FORMAT(' ERROR IN START/STOP TIME')
64      GO TO 7
65 501  WRITE(6,502) JSJ
66 502  FORMAT(' **ERRCR IN FLD',I2)
67      GO TO 7
68 506  PPARS(KK,1) = J1
69      IF(IFIX(XX(3)) .GT. NNOP) NNOP = XX(3)
70      PPARS(KK,3) = XX(1)
71      PPARS(KK,4) = XX(2)
72      PPARS(KK,2) = XX(3)
73      PPARS(KK,5) = TB
74      PPARS(KK,6) = XX(4)
75      PPARS(KK,9) = XX(17)
76      IF(T1 .NE. 0. .OR. T2 .NE. 0.) GO TO 370
77      PPARS(KK,7) = -90000000.
78      PPARS(KK,8) = 90000000.
79      GO TO 371
80 370  PPARS(KK,7) = T1
81      PPARS(KK,8) = T2
82 371  KK = KK + 1
83      IF(KK .LE. 6) GO TO 7
84      GO TO 728
85      25 IF(XX(1) .GE. 3. .AND. XX(1) .LE. 5.) GO TO 626
86 728  WRITE(6,27)
87 27  FORMAT(' INPLT GO N. (A6,1X,F8.3)',1
88      1 ' NENC.DIVISIONS FOR TIME.')
89      GO TO 7
90 626  K = KK - 1
91      NOP = NNOP
92      TTSPT = XX(1)
93      C COMPUTE LENGTH OF TIME FOR X SCALE.
94      R1 = 5000000.
95      R2 = -5000000.
96      DO 628 J = 1,K
97      I1 = PPARS(J,1)
98      IF(IFETC(I1,6) .LE. 12) GO TO 700
99      C HERE IF DATA FROM A MODEL.
100     I1 = IFETC(I1,6)
101     S1 = FLOAT(IFETC(I1,7)) / 60.
102     S2 = FLOAT(IFETC(I1,8)) / 60.
103     S1 = S1 + PPARS(.,5)
104     S2 = S2 + PPARS(J,5)
105     GO TO 701
106     C
107 700  I2 = IFETC(I1,8)
108     S1 = GCT(I2,1) + PPARS(J,5)
109 701  IF(PPARS(J,7) .GT. -8900000.) S1 = PPARS(J,7) + PPARS(.,5)
110     IF(S1 .LT. R1) R1 = S1
111     IF(IFETC(I1,6) .GT. 12) GO TO 702
112     I3 = IFETC(I1,9)
113     31 IF (GOT(I2,3).GT.C.) GO TO 331

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114      I2=I2+1
115      GO TO 332
116      331 I2 = GCT(I2,3)
117      332 I3 = I3 - 1
118      IF (I3 .GT. 1) GO TO 31
119      S2 = GCT(I2,1) + PPARS(J,5)
120      IF (PPARS(J,8) .LT. 8900000.) S2= PPARS(J,8) + PPARS(~,5)
121      IF (S2 .GT. R2) R2 = S2
122      628 CONTINUE
123      RUNSPT = R2 - R1
124      C  BUILD WHOLE PAGE GRAPH.
125      1C CALL NEWPAG
126      CALL MCVABS(C,780)
127      CALL DMPBUF
128      WRITE(6,21) (HEAD(J),J=1,15)
129      21 FCRMAT(*,2X,15A4)
130      CALL MCVABS(3,100)
131      CALL DRWABS(1000,100)
132      CALL DRWABS(1000,750)
133      CALL DRWABS(3,750)
134      CALL DRWABS(3,100)
135      CALL MCVABS(300,750)
136      CALL DRWABS(300,100)
137      CALL DMPBUF
138      I1 = TTSPT - 1.
139      I2 = 300
140      I3 = 700 / (I1 + 1)
141      DO 625 I = 1,I1
142      I2 = I2 + I3
143      CALL MCVABS(I2,100)
144      CALL DRWABS(I2,750)
145      625 CONTINUE
146      CALL DMPBUF
147      C  DRAW DIVISIONS FOR DIFFERENT GRAPHS.
148      I3Y = 650 / NCP
149      I4Y = I3Y / 2
150      I1 = NCP - 1
151      I2 = 100
152      IF (I1 .LT. 1) GO TO 280
153      DO 26 I = 1,I1
154      I4 = I2 + I4Y
155      CALL MCVABS(300,I4)
156      CALL DRWABS(305,I4)
157      CALL MCVABS(995,I4)
158      CALL DRWABS(1000,I4)
159      I2 = I2 + I3Y
160      CALL MOVABS(0,I2)
161      CALL DRWABS(1000,I2)
162      CALL DMPBUF
163      26 CONTINUE
164      I4 = I2 + I4Y
165      CALL MOVABS(300,I4)
166      CALL DRWABS(305,I4)
167      CALL MCVABS(995,I4)
168      CALL DRWABS(1000,I4)
169      CALL DMPBUF
170      C  ADD ALPHA

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171      I1 = 750
172      IDLP = 1
173      CALL VWINDO(C,,1023,,C,,780.)
174      CALL SWINDO(C,1023,0,780)
175      DO 70 I = 1,NOP
176      I11 = I1
177      I22 = I1 - I3Y + 30
178      ID = 0
179      DO 60 J = 1,K
180      IF(IFIX(PPARS(J,2)) .NE. I) GO TO 60
181      CALL MOVABS(0,I11)
182      CALL ANMODE
183      CALL DMPBUF
184      J33 = PPARS(J,1)
185      WRITE(6,55) IFETC(J33,2),PPARS(J,3)
186      55 FORMAT(1X,6X,A6,F8.2)
187      Y1 = I11 - 11.
188      CALL MCVEA(10.,Y1)
189      IF(ID .EQ. 0) GO TO 41C
190      ID1 = C
191      ID2 = C
192      CALL DSHARC(84.,Y1,10,101,102,10DUP)
193      GO TO 411
194      CALL DRAWA(84.,Y1)
195      CALL MCVABS(C,I22)
196      CALL ANMODE
197      CALL DMPBUF
198      WRITE(6,55) IFETC(J33,2),PPARS(J,4)
199      Y1 = I22 - 13.
200      CALL MCVEA(1C.,Y1)
201      IF(ID .EQ. 0) GO TO 413
202      ID1 = C
203      ID2 = C
204      CALL DSHARC(84.,Y1,10,101,102,10DUP)
205      GO TO 415
206      413 CALL DRAWA(84.,Y1)
207      415 ID = ID + 1
208      I11 = I11 - 21
209      I22 = I22 + 21
210      60 CONTINUE
211      I1 = I1 - I3Y
212      70 CONTINUE
213      X = (RLNSTP/T1SPT) + .000001
214      I = 2
215      IF(X .LT. 1.) I = 1
216      IF(X .GE. 60.) I = 3
217      IF(X .GE. 144C.) I = 4
218      X = X / TSTEPX(I)
219      X2 = R1 / TSTEPX(I)
220      X1 = X2 + X
221      I1 = T1SPT
222      DO 75 J = 1,I1
223      XNC(J) = X1
224      X1 = X1 + X
225      75 CONTINUE
226      CALL MCVABS(C,100)
227      CALL ANMODE

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228      CALL DMPBUF
229      IF (TTSPT .GT. 4.) GO TO 80
230      IF (TTSPT .GT. 3.) GO TO 79
231      WRITE(6,93) X2,(XNC(,),J=1,3)
232      93 FORMAT(' ',15X,F6.1,11X,F6.1,11X,F6.1,10X,F6.1)
233      GO TO 85
234      79 WRITE(6,77) X2,(XNO(J),J=1,4)
235      77 FORMAT(' ',15X,F6.1,6X,F6.1,7X,F6.1,6X,F6.1,7X,F6.1)
236      GO TO 85
237      80 WRITE(6,81) X2,(XNC(,),J=1,5)
238      81 FORMAT(' ',11X,6(4X,F6.1))
239      85 WRITE(6,86) ISALP(I)
240      86 FORMAT(' ',30X,'TIME (',A4,')')
241      C INITIALIZE DASH INFORMATION.
242      DC 9C J = 1,6
243      IIDAS(,1) = C
244      90 CONTINUE
245      C PLOT VARIABLES...
246      IL = 750
247      DO 40 I = 1,NOP
248      IL = IL - I3Y
249      IDAS = -1
250      IDUP = 1
251      DO 30 II = 1,K
252      IF (IFIX(PPARS(II,2)) .NE. I) GO TO 30
253      IDAS = IDAS + 1
254      X = R1
255      XL = RLNSTP
256      Y = PPARS(II,4)
257      YL = PPARS(II,3) - Y
258      CALL VINDO(X,XL,Y,YL)
259      CALL SWINDO(3(CC,700,IL,I3Y)
260      I4 = PPARS(II,1)
261      IF (IFETC(I4,6) .LE. 12) GO TO 234
262      C HERE IF DATA FROM A MODEL.
263      IB = IFETC(I4,6)
264      IR = IFETC(I4,1)
265      IF (IB.EQ.16) IR=IR*2
266      REWIND IB
267      READ(IB,ERR=710) WN
268      MK2 = IFETC(I4,9)
269      GO 712 MK1 = 1,MK2
270      READ(IB,ERR=710,END=710) (B(I1),I1=1,IR)
271      IF (IB.EQ.16) B(1)=B(IR-1)
272      IF (B(1) .GE. PPARS(II,7)) GO TO 713
273      712 CONTINUE
274      GO TO 30
275      713 X = B(1) + PPARS(II,5)
276      Y = B(IR)
277      IDUP = IDUP + 1
278      JOUT = 0
279      IF (Y .LT. PPARS(II,4).CR.Y.GT.PPARS(II,3)) JCLT=1
280      IF (Y .LT. PPARS(II,4)) Y=PPARS(II,4)
281      IF (Y .GT. PPARS(II,3)) Y = PPARS(II,3)
282      CALL MCVEA(X,1)
283      IF (PPARS(II,9) .GT. 0. .AND. JOUT .EQ. 0) CALL PLSYM(X,Y,IDUP)
284      KEN = 0

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285      KI = 0
286      ISTAR = PPARS(II,6)
287      IF(ISTAR.EQ.3) ISTAR = 0
288      725 IF(KEN.EQ.1) GO TO 30
289      READ(IB,ERR=710,END=810) (B(I1),I1=1,IR)
290      IF(IB.EQ.16)B(1)=B(IR-1)
291      IF(B(1).LE.PPARS(II,8)) GO TO 807
292      KEN = 1
293      REWIND IB
294      IF(ISTAR.EQ.0) GO TO 30
295      GC TC 808
296      807 IF(KEN.EQ.1) GO TO 30
297      808 KI = KI + 1
298      IF(ISTAR.EQ.0) GO TO 801
299      IF(MOD(KI,2).EQ.0) GO TO 802
300      IF(ISTAR.EQ.2) GO TO 803
301      X = B(1) + PPARS(II,5)
302      IF(ISTAR.EQ.0) Y = B(IR)
303      GO TO 802
304      Y = B(IR)
305      802 JOUT = 0.
306      IF(Y.LT.PPARS(II,4).OR.Y.GT.PPARS(II,3)) JOUT = 1
307      IF(Y.LT.PPARS(II,4)) Y = PPARS(II,4)
308      IF(Y.GT.PPARS(II,3)) Y = PPARS(II,3)
309      IF(PPARS(II,6).EQ.3.) GO TO 812
310      IF(IDAS.GT.0) GO TO 717
311      IDUP = IDUP + 1
312      CALL DRAWA(X,1)
313      812 IF(PPARS(II,9).LT.1.OR.JOUT.EQ.1) GC TO 805
314      IF(MOD(KI,2).EQ.0.OR.ISTAR.EQ.0)CALL PLSYM(X,Y,ICUP)
315      GO TO 805
316      717 L = IICAS(II,1)
317      N = IICAS(II,2)
318      CALL DSHARC(X,Y,IDAS,L,N,ICUP)
319      IIDAS(II,1) = L
320      IIDAS(II,2) = N
321      GO TO 812
322      805 IF(ICUP.LT.9) GC TC 806
323      CALL DMPBUF
324      IDUP = 1
325      806 IF(ISTAR.EQ.0) GO TO 725
326      IF(MOD(KI,2).EQ.0) GO TO 807
327      IF(ISTAR.EQ.1) Y = B(IR)
328      IF(ISTAR.EQ.1) GC TO 725
329      X = B(1) + PPARS(II,5)
330      GO TO 725
331      710 WRITE(6,711) IB
332      711 FORMAT(' ERROR TRYING TO READ UNIT',I3)
333      GC TC 30
334      C HERE IF CATA FROM A SL DATA BASE.
335      234 I1 = IFETC(I4,8)
336      JE = IFETC(I4,9)
337      233 IF(GOT(I1,1).GE.PPARS(II,7)) GO TO 240
338      JE = JE - 1
339      IF(JE.LE.0) GO TC 30
340      IF(GOT(I1,3).GT.0.) GO TO 235
341      I1 = I1 + 1

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342      GO TO 233
343 235 I1 = GCT(I1,3)
344      GO TO 233
345 240 JEE = JE
346      I2 = I1
347 241 IF (GOT(I2,1) .GT. PPARS(II,8)) GO TO 245
348      JEE = JEE - 1
349      IF (JEE .LE. 1) GO TO 245
350      IF (GOT(I2,3).GT.0.) GO TO 244
351      I2=I2+1
352      GO TO 241
353 244 I2 = GCT(I2,3)
354      GO TO 241
355 245 JE = JE - JEE
356      IF (JE .LE. 1) GO TO 30
357      X = (GCT(I1,1) + PPARS(II,5))
358      Y = GOT(I1,2)
359      IF (GOT(I1,3).GT.0.) GO TO 246
360      I1=I1+1
361      GO TO 97
362 246 I1 = GCT(I1,3)
363 97 IDUP = IDUP + 1
364      JOUT = 0
365      IF (Y.LT.PPARS(II,4) .OR. Y.GT.PPARS(II,3)).CLT=1
366      IF (Y .LT. PPARS(II,4)) Y = PPARS(II,4)
367      IF (Y .GT. PPARS(II,3)) Y = PPARS(II,3)
368      CALL MCVEA(X,Y)
369      IF (PPARS(II,9) .GT. 0. .AND. JOUT .EQ. 0) CALL PLSYM(X,Y,IDUP)
370      C SET UP FOR TYPE (F PLCT(STAIR STEPS OR PCINT TO PCINT)...
371      ISTAR = 50
372      I2 = JE - 1
373      IF (PPARS(II,6) .NE. 1. .AND. PPARS(II,6) .NE. 2.)
374      1 GO TO 141
375      I2 = (JE - 1) * 2
376      ISTAR = PPARS(II,6)
377 141 DO 35 III = 1,I2
378      IF (ISTAR .EQ. 50) GO TO 118
379      IF (MOD(III,2) .EQ. 0) GO TO 119
380      IF (ISTAR .EQ. 2) GO TO 117
381 118 X = (GCT(I1,1) + PPARS(II,5))
382      IF (ISTAR .EQ. 50) Y = GOT(I1,2)
383      GO TO 119
384      Y = GOT(I1,2)
385 119 JOUT = 0
386      IF (Y .LT. PPARS(II,4) .OR. Y .GT. PPARS(II,3)) JOUT = 1
387      IF (Y .LT. PPARS(II,4)) Y = PPARS(II,4)
388      IF (Y .GT. PPARS(II,3)) Y = PPARS(II,3)
389      IF (PPARS(II,6) .EQ. 3.) GO TO 820
390      IF (IDAS .GT. 0) GO TO 33
391      IDUP = IDUP + 1
392      CALL DRAWA(X,1)
393 820 IF (PPARS(II,9) .LT. 1. .OR. JOUT .EQ. 1) GO TO 34
394      IF (MCD(III,2).EQ.0.OR.ISTAR.EQ.50)CALL PLSYM(X,Y,IDUP)
395      GO TO 34
396 33 L = IIDAS(II,1)
397      N = IICAS(II,2)
398      CALL CSFARC(X,Y,ICAS,L,N,ICLP)

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399      IIDAS(II,1) = L
400      IIDAS(II,2) = N
401      GO TO 820
402      34 IF(IDCUP .LT. 9 ) GO TO 135
403      CALL DMPBUF
404      IDUP = 1
405      135 IF(ISTAR .EQ. 50) GO TO 136
406      IF(MOD(III,2) .EQ. 0) GO TO 35
407      IF(ISTAR .EQ. 1) Y = GOT(II,2)
408      IF(ISTAR .EQ. 1) GC TO 136
409      X = GOT(II,1) + PPARS(II,5)
410      136 IF (GOT(II,3).GT.0.) GO TO 137
411      I1=I1+1
412      GO TO 35
413      137 I1 = GOT(II,3)
414      35 CONTINUE
415      300 CONTINUE
416      40 CONTINUE
417      IF(IDUP .GT. 1) CALL DMPBUF
418      CALL PAGE3
419      WRITE(6,763)
420      763 FORMAT(' IF YOU WISH TO PLOT MORE ENTER 1 OTHERWISE RETN')
421      READ(5,762)IYX
422      762 FORMAT(I1)
423      IF(IYX.NE.1)CALL RETREV(LFLAG)
424      IF (IYX.EQ.1) GC TO 761
425      RETURN
426      END

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SPRT,S SMECEP.PLOT33(C)

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DB6-G03432*SMEDCP.PLCT33()
1      SUBROUTINE PLCT33
2      COMMON/PLOTS/XXX(556),IARA(6),ITP,DELX,NM,IXXY,IRR,IRI,JYES
3      COMMON/ABUF/IF,IFD,ISIF,IFETC(100,9),GOT(500,3)
4      COMMON/BBUF/B(601)
5      COMMON/NAMS/IXX,IDY,IZZZ,MNV,MNC
6      COMMON/PLTI/X2(170),XZZ(100),YLO,YHI,NG,RVAL
7      DIMENSION XNO(5),HEAD(15)
8      DATA IYDA/'Y'
9      CALL NEWPAG
10     WRITE(6,600)
11     600  FFORMAT(' INPLT HEADING WANTED. (15A4)')
12     602  READ(5,601,ERR=602) (HEAD(I),I=1,15)
13     601  FORMAT(15A4)
14     YDIS=YHI-YLO
15     XL0=XXZ(1)
16     XHI=XXZ(NM)
17     RUNSTP=XXZ(NM)-XXZ(1)
18     0077  IZ=3,5
19     IRSTP=RUNSTP
20     IRST2=IRSTP/IZ*IZ
21     77  IF(IRST2.EQ.IRSTP)GO TO 778
22     IZ=4
23     778  TTSTP=IZ
24     C  BUILD WHOLE PAGE GRAPH
25     1C  CALL NEWPAG
26     CALL MCVABS(0,780)
27     CALL DMPBUF
28     WRITE(6,21) (HEAD(j),J=1,15)
29     21  FORMAT(' ',2X,15A4)
30     CALL MCVABS(3,100)
31     CALL DRWABS(1000,100)
32     CALL DRWABS(1000,750)
33     CALL DRWABS(3,750)
34     CALL DRWABS(3,100)
35     CALL MCVABS(300,750)
36     CALL DRWABS(300,100)
37     CALL DMPBUF
38     I1 = TTSTP - 1.
39     I2 = 300
40     I3 = 700 / (I1 + 1)
41     DO 625 I = 1,I1
42     I2 = I2 + I3
43     CALL MCVABS(I2,100)
44     CALL DRWABS(I2,750)
45     625  CONTINUE
46     C  DRAW 'Y TICS'
47     IZY=263
48     DO 87 I=1,3
49     CALL MCVABS(300,IZY)
50     CALL DRWABS(305,IZY)
51     CALL MCVABS(995,IZY)
52     CALL DRWABS(1000,IZY)
53     ZZY=FLCAT(IZY)+162.5
54     IZY=ZZY
55     87  CONTINUE
56     CALL MCVABS(0,750)

```

```

57      CALL ANMODE
58      CALL DMPBUF
59      WRITE(6,55)ICY,YHI
60      FORMAT(' ',6X,A6,F9.3)
61      CALL MCVABS(0,130)
62      CALL ANMODE
63      CALL DMPBUF
64      WRITE(6,55)ICY,YLO
65      IZP1=IZ+1
66      X=(RUNSTP/TTSTP)+.0000C1
67      X1=XXZ(1)
68      DO 75 J=1,IZP1
69      XNO(J)=X1
70      X1=X1+X
71      75 CALL MCVABS(C,100)
72      CALL ANMODE
73      CALL DMPBUF
74      IZM2=IZ-2
75      GO TO (78,79,80),IZM2
76      78 WRITE(6,93)(XNO(J),J=1,4)
77      93 FORMAT(' ',18X,4(F6.1,9X))
78      GO TO 85
79      79 WRITE(6,777)(XNO(J),J=1,5)
80      777 FORMAT(' ',15X,5(F6.1,6X))
81      GO TO 85
82      80 WRITE(6,178)(XNO(J),J=1,6)
83      178 FORMAT(' ',15X,6(F6.1,4X))
84      85 WRITE(6,86)ICX
85      IF(ITP.EQ.1)WRITE(6,1001)RVAL
86      1001 FORMAT(18X,' R=',F6.4)
87      86 FORMAT(' ',37),A6)
88      C ***PLOT VARIABLES***
89      CALL VLINDO(XLO,RUNSTP,YLO,YDIS)
90      CALL SWINDO(300,700,100,650)
91      DO 51 I=1,NM
92      X=XXZ(I)
93      Y=XXZ(85+I)
94      51 CALL MCVEA(X,1)
95      CALL PLSYM(X,1,2)
96      CALL DMPBUF
97      IF(ITP.NE.1)GO TO 151
98      CALL DMPBUF
99      CALL MCVEA(XZZ(1),XZZ(NG+1))
100     CALL DRAWA(XZZ(NG),XZZ(NG+NG))
101     CALL DMPBUF
102     GO TO 454
103     151 CALL DMPBUF
104     CALL MCVEA(XXZ(1),XXZ(85+1))
105     DO 152 I=1,NG
106     CALL DRAWA(XZZ(I),XZZ(NG+I))
107     152 IF(MOD(I,15).EQ.0)CALL DMPBUF
108     CALL DMPBLF
109     454 CALL MCVABS(310,750)
110     CALL ANMODE
111     CALL DMPBUF
112     CALL MCVABS(0,0)
113     CALL MCVABS(C,0)

```

```
114      CALL DMPBUF
115      WRITE(6,455)
116      455  FORMAT(' HARD COPY WANTED?')
117      READ(5,456)IHD
118      456  FORMAT(A4)
119      IF (IHD.NE.IYCA)GO TO 999
120      CALL HCCOPY
121      999  CALL REGRES
122      STOP
123      END
```

```
APRT,S  SMEDEP.PLSYM(0)
```

```

DB6-G03432*SMEDEP.PLSYM(C)
1      SUBROUTINE PLSYM(X,Y,IDUP)
2      C  THIS ROUTINE PLOTS A X SYMBOL AT THE POINT DEFINED BY
3      C  ENGINEERING UNITS OF X AND Y.
4      C  COMMCN/TKTRNX/KBAUDR,KERROR,KGRAFL,KHOMNEY,KKMODE,
5      C  1 KHORSZ,KVERSZ,KITALC,KSIZEF,KLMRGN,KRMRGN,
6      C  2 KTBLSZ,KHORZT(10),KVERTT(10),
7      C  3 KBEAMX,KBEAMY,KMOVEF,KPCCHAR(4),
8      C  4 KMINSX,KMINSY,KMAXSX,KMAXSY,TMINVX,TMAXVX,TMAXVY,
9      C  STREALX,TREALY,TIMAGX,TIMAGY,TRCOSF,TRSINF,TRSCAL
10     CALL MCVEA(X,Y)
11     IX1 = KBEAMX - 3
12     IX2 = KBEAMX + 3
13     IY1 = KBEAMY - 3
14     IY2 = KBEAMY + 3
15     IF(IIDUP .LT. 9) GO TO 2
16     CALL DMPBUF
17     2 CALL MCVABS(IX1,IY1)
18     CALL DRWABS(IX2,IY2)
19     CALL MCVABS(IX2,IY1)
20     CALL DRWABS(IX1,IY2)
21     CALL MCVEA(X,1)
22     IDUP = 1
23     CALL DMPBUF
24     RETURN
25     END

```

6PRT,S SMEDEP.MOD2V(0)

```

DB6-G03432*SMEDEP.MOD2V(D)
1      SUBRCLTNE MCC2V
2      COMMON/ABUF/IF,IFD,ISIF,IFETC(100,9),GOT(500,3),IEND,IENDG
3      REAL DATA(2)
4      DATA JYES/'Y'
5      WRITE(6,20)
6      20 FORMAT(' THIS COMMAND ALLOWS THE USER TO MODIFY',
7      & ' ONE VARIABLE BY ANOTHER VARIABLE')
8      WRITE(6,21)
9      21 FORMAT(' DO YOU WISH INSTRUCTIONS?(Y,N)')
10     READ(5,22) JY
11     22 FORMAT(A1)
12     IF (JY.NE.JYES) GO TO 30
13     WRITE(6,23)
14     23 FORMAT(' ENTER DESIRED MODIFY FUNCTION'
15     & ' MFUN=1, VAR3=VAR1 + VAR2',//          =2, VAR3=VAR1 - VAR2//
16     & '          =3, VAR3=VAR1 * VAR2',//          =4, VAR3=VAR1 / VAR2//
17     & '          =5, VAR3=(VAR2-VAR1)/VAR1 * 100. (2)//')
18     READ(5,25) MFUN
19     25 FORMAT(I1)
20     IF (MFUN.GT.0 .AND. MFUN.LT.6) GO TO 35
21     WRITE(6,26)
22     26 FORMAT(' *** INCORRECT MODIFY FUNCTION, TRY AGAIN')
23     GO TO 24
24     WRITE(6,31)
25     31 FORMAT(' ENTER DESIRED MODIFY FUNCTION')
26     GO TO 24
27     35 WRITE(6,36)
28     36 FORMAT(/-
29     & ' PLEASE LIST VAR1 TO BE MODIFIED BY VAR2 TO CREATE VAR3')
30     40 WRITE(6,60)
31     60 FORMAT(' VAR1    VAR2    VAR3')
32     READ(5,80) ID1, ID2, ID3
33     80 FORMAT(3(A6,1X))
34     I1=0
35     I2=0
36     DO 120 I=1,IF
37     IF (IFETC(I,2).NE.ID3) GO TO 90
38     WRITE(6,85) ID3
39     85 FORMAT(' DUPLICATE NAME ',A6,' TRY AGAIN')
40     GO TO 40
41     IF (IFETC(I,2).NE.ID1) GO TO 100
42     I1=I
43     100 IF (IFETC(I,2).NE.ID2) GO TO 120
44     I2=I
45     120 CONTINUE
46     IF (I1.GT.0) GO TO 160
47     WRITE(6,140) ID1
48     140 FORMAT(2X,A6,' NOT RECOGNIZED, TRY AGAIN')
49     GO TO 40
50     160 IF (I2.GT.0) GO TO 180
51     WRITE(6,140) ID2
52     GO TO 40
53     180 IN1=IFETC(I1,9)
54     IN2=IFETC(I2,9)
55     NG1=IFETC(I1,8)
56     NVN=C

```

```

57      DO 280 I=1,IN1
58      NG2=IFETC(I2,8)
59      DO 240 J=1,IN2
60      IF (ABS(GOT(NG2,1)-GOT(NG1,1)).GT.1.E-10) GO TO 195
61      DATA(1)=GOT(NG1,1)
62      DATA(2)=GOT(NG1,2)
63      CALL MCDVVAR(DATA,MFLN,1D3,GOT(NG2,2),I1)
64      NVM=NVM+1
65      IFETC(IF+1,9)=NVM
66 195  CONTINUE
67      IF (GOT(NG2,3).GT.0.) GO TO 200
68      NG2=NG2+1
69      GO TO 240
70 200  NG2=GOT(NG2,3)
71 240  CONTINUE
72      IF (GOT(NG1,3).GT.0.) GO TO 260
73      NG1=NG1+1
74      GO TO 280
75 260  NG1=GOT(NG1,3)
76 280  CONTINUE
77      LFLAG=99
78      IF=IF+1
79      CALL RETREV(LFLAG)
80      RETURN
81      END

```

8PRT,S 'SMEDEP.MODVAR(C)

```

DB6-G03432*SMEDEP.MODVAR(0)
1      SUBROUTINE MODVAR(DATA, MFUN, NVALN, VK, ~1)
2      COMMON/ABUF/IF, IFD, ISIF, IFETC(1CC,9), GCT(5CC,3), IEND, IENDC
3      REAL DATA(2)
4      GO TO (10,20,30,40,50), MFUN
5      10  DATAN=DATA(2)+VK
6      20  DATAN=DATA(2)-VK
7      30  DATAN=DATA(2)*VK
8      40  DATAN=DATA(2)/VK
9      100 CONTINUE
10      110 WRITE(6,110) DATA, VK, DATAN, NVALN
11      110 FORMAT(4G12.5,5X,A6)
12      IF (NVALN.EQ.NVALL) GO TO 140
13      NVALL=NVALN
14      NC=0
15      ISIF=ISIF+1
16      IF (IF+1.LE.IEND) GO TO 130
17      WRITE(6,120)
18      120 FORMAT(//'* *** FETCH ARRAY FULL*')
19      GO TO 520
20      130 IFETC(IF+1,1)=IFETC(~1,1)
21      IFETC(IF+1,2)=NVALN
22      IFETC(IF+1,3)=IFETC(J1,3)
23      IFETC(IF+1,4)=IFETC(J1,4)
24      IFETC(IF+1,5)=IFETC(J1,5)
25      IFETC(IF+1,6)=IFETC(J1,6)
26      IF (IFETC(IF+1,6).GT.12) IFETC(IF+1)=9
27      IFETC(IF+1,7)=IFETC(J1,7)
28      IFETC(IF+1,8)=IFD+1
29      140 IFC=IFC+1
30      IF (IFC.LE.IENDG) GO TO 160
31      WRITE(6,150)
32      150 FORMAT(//'* *** DATA BUFFER FULL*')
33      IFD=IFD-1
34      GO TO 520
35      160 GOT(IFC,1)=DATA(1)
36      IF (MFUN.EQ.7) GOT(IFD,1)=DATAN
37      GOT(IFD,2)=DATAN
38      GOT(IFD,3)=0.
39      NC=NC+1
40      IF (NC.LT.IFETC(IF,9)) GOT(IFC,3)=IFC+1
41      RETURN
42      520 WRITE(6,530)
43      530 FORMAT(//'* REQUEST TO MODIFY DATA DENIED*//)
44      LFLAG=99
45      CALL RETREV(LFLAG)
46      END

```

APPENDIX B

DATA BASE DIRECTORY

LABELS FOR EXPERIMENT M171

1 V02-REST (L/MIN)
 2 V02-LEVEL 1 (L/MIN)
 3 V02-LEVEL 2 (L/MIN)
 4 V02-LEVEL 3 (L/MIN)
 5 V02-RECOVERY (L/MIN)
 6 VC02-REST (L/MIN)
 7 VC02-LEVEL 1 (L/MIN)
 8 VC02-LEVEL 2 (L/MIN)
 9 VC02-LEVEL 3 (L/MIN)
 10 VC02-RECOVERY (L/MIN)
 11 RER-REST
 12 RER-LEVEL 1
 13 RER-LEVEL 2
 14 RER-LEVEL 3
 15 RER-RECOVERY
 16 VE-REST (L/MIN)
 17 VE-LEVEL 1 (L/MIN)
 18 VE-LEVEL 2 (L/MIN)
 19 VE-LEVEL 3 (L/MIN)
 20 VE-RECOVERY (L/MIN)
 21 HR-REST (BT/MIN)
 22 HR-LEVEL 1 (BT/MIN)
 23 HR-LEVEL 2 (BT/MIN)
 24 HR-LEVEL 3 (BT/MIN)
 25 HR-RECOVERY (BT/MIN)
 26 SBP-REST (MM HG)
 27 SBP-LEVEL 1 (MM HG)
 28 SBP-LEVEL 2 (MM HG)
 29 SBP-LEVEL 3 (MM HG)
 30 SBP-RECOVERY (MM HG)
 31 DBP-REST (MM HG)
 32 DBP-LEVEL 1 (MM HG)
 33 DBP-LEVEL 2 (MM HG)
 34 DBP-LEVEL 3 (MM HG)
 35 DBP-RECOVERY (MM HG)
 36 MAP-REST (MM HG)
 37 MAP-LEVEL 1 (MM HG)
 38 MAP-LEVEL 2 (MM HG)
 39 MAP-LEVEL 3 (MM HG)
 40 MAP-RECOVERY (MM HG)
 41 CARD OUT-REST (L/MIN)
 42 CARD OUT-LEV 1 (L/MIN)
 43 CARD OUT-LEV 2 (L/MIN)
 44 CARD OUT-LEV 3 (L/MIN)
 45 CARD OUT-RECOV (L/MIN)
 46
 47
 48
 49
 50
 51 V01 * 160 HR
 52 V02 * 140 HR
 53 V02/KG-MIN * 180 HR
 54 VO2 * 150 WATTS
 55 VE * 2. L VO2
 56 CO : 2. L VO2
 57 CO : 160 HR

LABELS FOR EXPERIMENT M171

58 CO : 140 HR
 59 CO : 200 SBP
 60 CO : 110 MAP
 61 SBP * 15 L/MIN
 62 DBP * 15 L/MIN
 63 SBP * 160 HR
 64 DBP * 160 HR
 65 RER * 160 HR
 66 SV * 160 HR
 67 AV02 * 2 L VO2
 68 AV02 * 1 L VO2
 69 MAP * 160 HR
 70 MAP * 12 L/MIN CO
 71 MAP * 15 L/MIN CO
 72 TPR * 160 HR
 73 TPR * 12 L/MIN CO
 74 TPR * 15 L/MIN CO
 75 TPR * 2 L/MIN VO2
 76 AV02 * 120 HR
 77 AV02 * 140 HR
 78 AV02 * 160 HR
 79
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 89 AVG XRCTS STROKE VOL
 90
 91 STROKE VOL-REST CC
 92 STROKE VOL-LEV 1 CC
 93 STROKE VOL-LEV 2 CC
 94 STROKE VOL-LEV 3 CC
 95 STROKE VOL-RECOV CC
 96 AV02 DIFF-REST
 97 AV02 DIFF-LEV 1
 98 AV02 DIFF-LEV 2
 99 AV02 DIFF-LEV 3
 100 AV02 DIFF-RECOV
 101 TPR-REST
 102 TPR-LEV 1
 103 TPR-LEV 2
 104 TPR-LEV 3
 105 TPR-RECOVERY
 106 PULSE PRS-REST (MMHG)
 107 PULSE PRS-LEV 1 (MMHG)
 108 PULSE PRS-LEV 2 (MMHG)
 109 PULSE PRS-LEV 3 (MMHG)
 110 PULSE PRS-RECOV (MMHG)
 111 TIME TENS INDX-REST
 112 TIME TENS INDX-LEV 1
 113 TIME TENS INDX-LEV 2
 114 TIME TENS INDX-LEV 3

LABELS FOR EXPERIMENT M171

115 TIME TENS INDX-RECOV

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LABELS FOR EXPERIMENT M171

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END ONSITE PRINTOUT ON DECEMBER 3, 1975 AT 08:43:35
DB6-603432*TPF\$(0).W(0)

LABELS FOR EXPERIMENT M092

1 HEART RATE (CONTROL)
 2 HEART RATE (-30)
 3 HEART RATE (-40)
 4 HEART RATE (-50)
 5 HEART RATE (RECOVERY)
 6 SYSTOLIC BP (CONTROL)
 7 SYSTOLIC BP (-30)
 8 SYSTOLIC BP (-40)
 9 SYSTOLIC BP (-50)
 10 SYSTOLIC BP (RECOVERY)
 11 DIASTOLIC BP (CONTROL)
 12 DIASTOLIC BP (-30)
 13 DIASTOLIC BP (-40)
 14 DIASTOLIC BP (-50)
 15 DIASTOLIC BP (RECOVERY)
 16 MEAN BP (CONTROL)
 17 MEAN BP (-30)
 18 MEAN BP (-40)
 19 MEAN BP (-50)
 20 MEAN BP (RECOVERY)
 21 PULSE PRESSURE (CONTROL)
 22 PULSE PRESSURE (-30)
 23 PULSE PRESSURE (-40)
 24 PULSE PRESSURE (-50)
 25 PULSE PRESSURE (RECOVERY)
 26 PLVC EOP (CONTROL)
 27 PLVC EOP (-30)
 28 PLVC EOP (-40)
 29 PLVC EOP (-50)
 30 PLVC EOP (RECOVERY)
 31 S1 SLOPE (CONTROL)
 32 S1 SLOPE (-30)
 33 S1 SLOPE (-40)
 34 S1 SLOPE (-50)
 35 S1 SLOPE (RECOVERY)
 36 S2 SLOPE (CONTROL)
 37 S2 SLOPE (-30)
 38 S2 SLOPE (-40)
 39 S2 SLOPE (-50)
 40 S2 SLOPE (RECOVERY)
 41 S1 COMPLIANCE (CONTROL)
 42 S1 COMPLIANCE (-30)
 43 S1 COMPLIANCE (-40)
 44 S1 COMPLIANCE (-50)
 45 S1 COMPLIANCE (RECOVERY)
 46 PEP (CONTROL)
 47 PEP (-30)
 48 PEP (-40)
 49 PEP (-50)
 50 PEP (-RECOVERY)
 51 LVET (CONTROL)
 52 LVET (-30)
 53 LVET (-40)
 54 LVET (-50)
 55 LVET (RECOVERY)
 56 PEP/LVET (CONTROL)
 57 PEP/LVET (-30)

LABELS FOR EXPERIMENT M092

58 PEP/LVET (-40)
 59 PEP/LVET (-50)
 60 PEP/LVET (RECOVERY)
 61 ETI (CONTROL)
 62 ETI (-30)
 63 ETI (-40)
 64 ETI (-50)
 65 ETI (RECOVERY)
 66 (Q-S2) I (CONTROL)
 67 (Q-S2) I (-30)
 68 (Q-S2) I (-40)
 69 (Q-S2) I (-50)
 70 (Q-S2) I (RECOVERY)
 71 S1 AMPLITUDE (CONTROL)
 72 S1 AMPLITUDE (-30)
 73 S1 AMPLITUDE (-40)
 74 S1 AMPLITUDE (-50)
 75 S1 AMPLITUDE (RECOVERY)
 76 STROKE VOLUME (CONTROL)
 77 STROKE VOLUME (-30)
 78 STROKE VOLUME (-40)
 79 STROKE VOLUME (-50)
 80 STROKE VOLUME (RECOVERY)
 81 CARDIAC OUTPUT (CONTROL)
 82 CARDIAC OUTPUT (-30)
 83 CARDIAC OUTPUT (-40)
 84 CARDIAC OUTPUT (-50)
 85 CARDIAC OUTPUT (RECOVERY)
 86 PRU (CONTROL)
 87 PRU (-30)
 88 PRU (-40)
 89 PRU (-50)
 90 PRU (RECOVERY)
 91 ECHO LV-THICKNESS (CONTROL)
 92 ECHO LV-THICKNESS (-30)
 93 ECHO LV-THICKNESS (-40)
 94 ECHO LV-THICKNESS (-50)
 95 ECHO LV-THICKNESS (RECOVERY)
 96 ECHO LV-STROKE VOL. (CONTROL)
 97 ECHO LV-STROKE VOL. (-30)
 98 ECHO LV-STROKE VOL. (-40)
 99 ECHO LV-STROKE VOL. (-50)
 100 ECHO LV-STROKE VOL. (RECOVERY)
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LABELS FOR EXPERIMENT M092

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 151 VECTAN HEART RATE (CONTROL)
 152 VECTAN HEART RATE (-30)
 153 VECTAN HEART RATE (-40)
 154 VECTAN HEART RATE (-50)
 155 VECTAN HEART RATE (RECOVERY)
 156 PR INTERVAL (CONTROL)
 157 PR INTERVAL (-30)
 158 PR INTERVAL (-40)
 159 PR INTERVAL (-50)
 160 PR INTERVAL (RECOVERY)
 161 QRS DURATION (CONTROL)
 162 QRS DURATION (-30)
 163 QRS DURATION (-40)
 164 QRS DURATION (-50)
 165 QRS DURATION (RECOVERY)
 166 QT INTERVAL (CONTROL)
 167 QT INTERVAL (-30)
 168 QT INTERVAL (-40)
 169 QT INTERVAL (-50)
 170 QT INTERVAL (RECOVERY)
 171 P MAX MAG (CONTROL)

LABELS FOR EXPERIMENT M092

172 P MAX MAG (-30)
 173 P MAX MAG (-40)
 174 P MAX MAG (-50)
 175 P MAX MAG (RECOVERY)
 176 P MAX AZ (CONTROL)
 177 P MAX AZ (-30)
 178 P MAX AZ (-40)
 179 P MAX AZ (-50)
 180 P MAX AZ (RECOVERY)
 181 P MAX EL (CONTROL)
 182 P MAX EL (-30)
 183 P MAX EL (-40)
 184 P MAX EL (-50)
 185 P MAX EL (RECOVERY)
 186 QRS-E CIRC (CONTROL)
 187 QRS-E CIRC (-30)
 188 QRS-E CIRC (-40)
 189 QRS-E CIRC (-50)
 190 QRS-E CIRC (RECOVERY)
 191 QRS-E AREA (CONTROL)
 192 QRS-E AREA (-30)
 193 QRS-E AREA (-40)
 194 QRS-E AREA (-50)
 195 QRS-E AREA (RECOVERY)
 196 QRS-E DEPTH (CONTROL)
 197 QRS-E DEPTH (-30)
 198 QRS-E DEPTH (-40)
 199 QRS-E DEPTH (-50)
 200 QRS-E DEPTH (RECOVERY)
 201 QRS MAX MAG (CONTROL)
 202 QRS MAX MAG (-30)
 203 QRS MAX MAG (-40)
 204 QRS MAX MAG (-50)
 205 QRS MAX MAG (RECOVERY)
 206 QRS MAX AZ (CONTROL)
 207 QRS MAX AZ (-30)
 208 QRS MAX AZ (-40)
 209 QRS MAX AZ (-50)
 210 QRS MAX AZ (RECOVERY)
 211 QRS MAX EL (CONTROL)
 212 QRS MAX EL (-30)
 213 QRS MAX EL (-40)
 214 QRS MAX EL (-50)
 215 QRS MAX EL (RECOVERY)
 216 ST-E CIRC (CONTROL)
 217 ST-E CIRC (-30)
 218 ST-E CIRC (-40)
 219 ST-E CIRC (-50)
 220 ST-E CIRC (RECOVERY)
 221 ST-E AREA (CONTROL)
 222 ST-E AREA (-30)
 223 ST-E AREA (-40)
 224 ST-E AREA (-50)
 225 ST-E AREA (RECOVERY)
 226 ST-E DEPTH (CONTROL)
 227 ST-E DEPTH (-30)
 228 ST-E DEPTH (-40)

LABELS FOR EXPERIMENT M092

229 ST-E DEPTH (-50)
 230 ST-E DEPTH (RECOVERY)
 231 ST MAX MAG (CONTROL)
 232 ST MAX MAG (-30)
 233 ST MAX MAG (-40)
 234 ST MAX MAG (-50)
 235 ST MAX MAG (RECOVERY)
 236 ST MAX AZ (CONTROL)
 237 ST MAX AZ (-30)
 238 ST MAX AZ (-40)
 239 ST MAX AZ (-50)
 240 ST MAX AZ (RECOVERY)
 241 ST MAX EL (CONTROL)
 242 ST MAX EL (-30)
 243 ST MAX EL (-40)
 244 ST MAX EL (-50)
 245 ST MAX EL (RECOVERY)
 246 J MAG (CONTROL)
 247 J MAG (-30)
 248 J MAG (-40)
 249 J MAG (-50)
 250 J MAG (RECOVERY)
 251 J AZ (CONTROL)
 252 J AZ (-30)
 253 J AZ (-40)
 254 J AZ (-50)
 255 J AZ (RECOVERY)
 256 J EL (CONTROL)
 257 J EL (-30)
 258 J EL (-40)
 259 J EL (-50)
 260 J EL (RECOVERY)
 261 D-ST SLOPE (CONTROL)
 262 D-ST SLOPE (-30)
 263 D-ST SLOPE (-40)
 264 D-ST SLOPE (-50)
 265 D-ST SLOPE (RECOVERY)
 266 D-P VECTOR INTEGRAL (CONTROL)
 267 D-P VECTOR INTEGRAL (-30)
 268 D-P VECTOR INTEGRAL (-40)
 269 D-P VECTOR INTEGRAL (-50)
 270 D-P VECTOR INTEGRAL (RECOVERY)
 271 D-QRS VECTOR INTEGRAL (CONTROL)
 272 D-QRS VECTOR INTEGRAL (-30)
 273 D-QRS VECTOR INTEGRAL (-40)
 274 D-QRS VECTOR INTEGRAL (-50)
 275 D-QRS VECTOR INTEGRAL (RECOVERY)
 276 D-ST VECTOR INTEGRAL (CONTROL)
 277 D-ST VECTOR INTEGRAL (-30)
 278 D-ST VECTOR INTEGRAL (-40)
 279 D-ST VECTOR INTEGRAL (-50)
 280 D-ST VECTOR INTEGRAL (RECOVERY)
 281 QRS-T SPATIAL ANGLE (CONTROL)
 282 QRS-T SPATIAL ANGLE (-30)
 283 QRS-T SPATIAL ANGLE (-40)
 284 QRS-T SPATIAL ANGLE (-50)
 285 QRS-T SPATIAL ANGLE (RECOVERY)

LABELS FOR EXPERIMENT M092

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 301 DATE (CAL.)
 302 DOY
 303 MD
 304 TIME (GMT)
 305 PRESYNCOPE TIME
 306 WEIGHT
 307 L CALF CIRC
 308 R CALF CIRC
 309 L LEG VOLUME
 310 R LEG VOLUME
 311 ORAL TEMP.
 312 AMB. TEMP-BEGIN
 313 AMB. TEMP-END
 314 LBNPD TEMP-BEGIN
 315 LBNPD TEMP-END
 316 HOURS SINCE LAST MEAL
 317 HOURS SINCE SLEEP
 318 HOURS OF SLEEP
 319 TEST STATION
 320 CLINICAL SBP
 321 CLINICAL DBP
 322 C/TS RATIO (DIAM)
 323 C/TS RATIO (AREAL)
 324 C/TD RATIO (DIAM)
 325 C/TD RATIO (AREAL)
 326
 327
 328
 329 ATMOSPHERIC PRESS (MMHG)
 330 ACHILLES REFLEX TIME
 331 P-VENOUS PRESS
 332 CIRC TIME-1 (ARM-RHEART)
 333 CIRC TIME-2 (ARM-LHEART)
 334 CIRC TIME-3 (AREA-FEM)
 335 ECHO LV-THICKNESS (-8)
 336 ECHO LV-THICKNESS (-16)
 337 ECHO SV (-8)
 338 ECHO SV (-16)
 339 HEART RATE (-8)
 340 HEART RATE (-16)
 341 SYSTOLIC BP (-8)
 342 SYSTOLIC BP (-16)

LABELS FOR EXPERIMENT M092

343 DIASTOLIC BP (-8)
 344 DIASTOLIC BP (-16)
 345 MEAN BP (-8)
 346 MEAN BP (-16)
 347 PULSE PRESS (-8)
 348 PULSE PRESS (-16)
 349 PLVC EOP (-8)
 350 PLVC EOP (-16)
 351 S1 SLOPE (-8)
 352 S1 SLOPE (-16)
 353 S2 SLOPE (-8)
 354 S2 SLOPE (-16)
 355 S1 COMPLIANCE (-8)
 356 S2 COMPLIANCE (-16)
 357 LEG BL FL-1 (-30)
 358 LEG BL FL-2 (-30)
 359 LEG BL FL-1 (-50)
 360 LEG BL FL-2 (-50)

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LABELS FOR EXPERIMENT M073

1 TOTAL URINE VOL (ML)
 2 URINE OSMOL (MOSM/TV)
 3 URINE NA (MEQ/TV)
 4 URINE K (MEQ/TV)
 5 URINE MG (MEQ/TV)
 6 URINE PO4 (MG/TV)
 7 URINE CA (MEQ/TV)
 8 URINE CL (MEQ/TV)
 9 URINE H (MLAOH/VOL)
 10 URINE SPECIFIC GRAV
 11 URINE CREAT (MG/TV)
 12 URINE UR1C A (MG/TV)
 13 EPINEPHRINE (UG/TV)
 14 NOREPINEPHRIN (UG/TV)
 15 ADH (MU/TV)
 16 HYDROCORTISON (UG/TV)
 17 ALDOSTERONE (UG/TV)
 18 17-OH-CORT (MG/TV)
 19 5-OH-IAA (MG/TV)
 20 BLOOD OSMOL (MOSM/L)
 21 BLOOD NA (MEQ/L)
 22 BLOOD K (MEQ/L)
 23 BLOOD MG (MG)
 24 BLOOD PO4 (MG)
 25 BLOOD CA (MG)
 26 BLOOD CL (MEQ/L)
 27 BLOOD GLUCOSE (MG)
 28 TOTAL PLASMA PROT (G)
 29 PARATHORMONE (PG/ML)
 30 CALCITONIN (PG/ML)
 31 VITAMIN D (NG/ML)
 32 TSH (PG/ML)
 33 HYDROCORT (UG/100ML)
 34 ALDOSTERONE (PG/ML)
 35 GROWTH HORMONE (NG/ML)
 36 ANGIOTENSIN (MUG/ML/H)
 37 INSULIN (UU/ML)
 38 THYROXIN (UG/100ML)
 39 ACTH (PG/ML)
 40 TESTOST (NG/100ML)
 41 DIET CALORIES (KCAL)
 42 DIET PROTEIN (G)
 43 DIET CALCIUM (MG)
 44 DIET PHOSPHORUS (MG)
 45 DIET SODIUM (MG)
 46 DIET MAGNESIUM (MG)
 47 DIET POTASSIUM (MG)
 48 WATER INTAKE (ML)
 49
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 51
 52
 53 PREGNANEDIOL (MG/TV)
 54 ANDROSTERONE (MG/TV)
 55 ETIOCHOLAN (MG/TV)
 56 DEHYDROEPIANO (MG/TV)
 57 11-O-ANDRO (MG/TV)

LABELS FOR EXPERIMENT M073

58 11-O-ETIOCHO (MG/TV)
 59 11-OH-ANDRO (MG/TV)
 60 11-OH-ETIOCHO (MG/TV)
 61 TOTAL 17-KETO (TMG/TV)
 62 TOTAL LYSINE (MG/TV)
 63 TOTAL HISTIDINE (MG/TV)
 64 TOTAL NH₃X1000 (MG/TV)
 65 TOTAL ARGININE (MG/TV)
 66 TOTAL OH-PROL (MG/TV)
 67 TOTAL ASP ACID (MG/TV)
 68 TOTAL THREONIN (MG/TV)
 69 TOTAL SERINE (MG/TV)
 70 TOTAL GLU ACID (MG/TV)
 71 TOTAL PROLINE (MG/TV)
 72 TOTAL GLYCINE (MG/TV)
 73 TOTAL ALANINE (MG/TV)
 74 TOTAL CYSTIN/2 (MG/TV)
 75 TOTAL VALINE (MG/TV)
 76 TOTAL METHION (MG/TV)
 77 TOTAL ISOLEUC (MG/TV)
 78 TOTAL LEUCINE (MG/TV)
 79 TOTAL TYROSINE (MG/TV)
 80 TOTAL PHENYLAL (MG/TV)
 81 FREE OH-LYSINE (MG/TV)
 82 FREE GABA (MG/TV)
 83 FREE ORNITHINE (MG/TV)
 84 FREE ETOHAMINE (MG/TV)
 85 FREE NH₃X1000 (MG/TV)
 86 FREE LYSINE (MG/TV)
 87 FREE 1-CH₃-HIS (MG/TV)
 88 FREE HISTIDINE (MG/TV)
 89 FREE 3-CH₃-HIS (MG/TV)
 90 FREE ANSERINE (MG/TV)
 91 FREE TRYPTOPHA (MG/TV)
 92 FREE CREATININ (MG/TV)
 93 FREE CARNOSINE (MG/TV)
 94 FREE ARGININE (MG/TV)
 95 PHOSPHOSERINE (MG/TV)
 96 PO₄-ETOH-AMINE (MG/TV)
 97 FREE TAURINE (MG/TV)
 98 UREA/1000 (MG/TV)
 99 FREE OH-PROLIN (MG/TV)
 100 FREE ASPART AC (MG/TV)
 101 FREE THREONINE (MG/TV)
 102 FREE SERINE (MG/TV)
 103 FREE ASPARAGIN (MG/TV)
 104 FREE GLUTAMINE (MG/TV)
 105 FREE SARCOSINE (MG/TV)
 106 FREE PROLINE (MG/TV)
 107 FREE GLUT ACID (MG/TV)
 108 FREE CITRULLIN (MG/TV)
 109 FREE GLYCINE (MG/TV)
 110 FREE ALANINE (MG/TV)
 111 A-AMINOADIPTC (MG/TV)
 112 A-NH₂-N-BUTYR (MG/TV)
 113 FREE VALINE (MG/TV)
 114 FREE CYSTIN/2 (MG/TV)

LABELS FOR EXPERIMENT M073

115 CYSTATHIONINE (MG/TV)
 116 FREE METHIONIN (MG/TV)
 117 FREE ISOLEUCIN (MG/TV)
 118 FREE LEUCINE (MG/TV)
 119 FREE TYROSINE (MG/TV)
 120 FREE PHENYLALA (MG/TV)
 121 FREE B-ALANINE (MG/TV)
 122 B-NH₂-I-BUTYR (MG/TV)
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LABELS FOR EXPERIMENT M073

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LABELS FOR EXPERIMENT M110

1 RBC (MILL/CU MM)
2 HB (G PCT)
3 OXYHB (PCT SAT)
4 COHB (PCT SAT)
5 METHB (PCT)
6 HCT (PCT)
7 RETIC (PCT)
8 RETIC NO (THOU/CU MM)
9 RETIC INDEX
10 MCV (CU UM)
11 MCH (PM G)
12 MCHC (PCT)
13 PLAT (/CU MM)
14 TOT EO (/CU MM)
15 WBC (/CU MM)
16 NEUT NO (/CU MM)
17 LYMPH NO (/CU MM)
18 MONO NO (/CU MM)
19 NEUT (PCT)
20 LYMPH (PCT)
21 MONO (PCT)
22 EO (PCT)
23 BASO (PCT)
24 BAND (PCT)
25 TSP (G PCT)
26 ALB (G PCT)
27 A1-M (G PCT)
28 A2-M (G PCT)
29 B-M (G PCT)
30 G-M (G PCT)
31 LIPO A1 (PCT)
32 LIPO PRE B (PCT)
33 LIPO B (PCT)
34 CRP (-1 OR +1)
35 RPR (-1 OR +1)
36 AHA (-1 OR +1)
37 LDH 1 (PCT)
38 LDH 2 (PCT)
39 LDH 3 (PCT)
40 LDH 4 (PCT)
41 LDH 5 (PCT)
42
43 TRANS (MG PCT)
44 HAPTO (MG PCT)
45 CERULO (MG PCT)
46 HEMOPEX (MG PCT)
47 PRE ALB (MG PCT)
48
49 IGA (MG PCT)
50 IGG (MG PCT)
51 IGM (MG PCT)
52 IGD (MG PCT)
53 IGE (NG/ML)
54
55 B1 A (MG PCT)
56 A2 MACRO (MG PCT)
57 A GLYCO (MG PCT)

LABELS FOR EXPERIMENT M110

58 A1 ANTITRYP (MG PCT)
 59 LYSOZYME (UG/ML)
 60
 61 PL PROT (G PCT)
 62 PL ALB (G PCT)
 63 PL A2-M (G PCT)
 64 PL G-M (G PCT)
 65 PL PRE ALB (MG PCT)
 66 PL TRANS (MG PCT)
 67 PL HAPTO (MG PCT)
 68 PL HEMOPEX (MG PCT)
 69 PL CERULO (MG PCT)
 70 PL A2 MACRO (MG PCT)
 71 PL INT-A-TRIP INH (MG PCT)
 72 PL A1 GLYCO (MG PCT)
 73 PL A1 ANTITRIP (MG PCT)
 74 PL C3 (MG PCT)
 75 PL C4 (MG PCT)
 76 PL CI INH (PCT NPS)
 77 PL CRP (MG PCT)
 78 PL LYSOZYME (UG/ML)
 79 PL IGG (MG PCT)
 80 PL IGA (MG PCT)
 81 PL IGM (MG PCT)
 82 PL IGD (MG PCT)
 83 PL IGE (MG PCT)
 84
 85 RCM (ML)
 86 (+ OR -) RCM PCT (PCT)
 87 RCM/WT (ML/KG)
 88 PVOL (ML)
 89 (+ OR -) PVOL PCT (PCT)
 90 PVOL/WT (ML/KG)
 91 PI (UG PCT)
 92 PIT (MG/KG/DAY)
 93 FE T1/2 (MIN)
 94 RBC 51CR T1/2 (DAYS)
 95 RBC 14C
 96 FE REAPPEARANCE (PCT)
 97 BLD VOL (ML)
 98 BLD VOL/WT (ML/KG)
 99 PER HCT (PCT)
 100 BDY HCT (PCT)
 101 HCT RATIO
 102 BLD DRWN (ML/MAN)
 103 TBW (L)
 104 ECF (L)
 105 ICF (L)
 106 ISF (L)
 107
 108
 109 TOT K (MEQ)
 110 BDY WT (KG)
 111 LEAN BDY MASS (KG)
 112 3H2O (UCI)
 113 43K (UCI)
 114

LABELS FOR EXPERIMENT M110

115 51CR (UCI)
 116 125I (UCI)
 117 35SO4 (UCI)
 118 59FE (UCI)
 119 14C (UCI)
 120 TOT DOSE (UCI)
 121 HGB (G PCT)
 122 METHGB (PCT)
 123 GSH (MG PCT)
 124 LIPID PEROXIDES (NM/G HB)
 125 ATP (UM/G HB)
 126 23DPG (UM/G HB)
 127 ATP/DPG
 128 G6PD (EU/G HB)
 129 HK (EU/G HB)
 130 PFK (EU/G HB)
 131 G3PD (EU/G HB)
 132 PGK (EU/G HB)
 133 PK (EU/G HB)
 134 ACHE (EU/G HB)
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 138 SPG1 (PCT)
 139 SPG2 (PCT)
 140 SPG3 (PCT)
 141 SPG4 (PCT)
 142 SPG5 (PCT)
 143 SPG6 (PCT)
 144 SPG7 (PCT)
 145 SPG8 (PCT)
 146 SPG9 (PCT)
 147 SPG10 (PCT)
 148 SPG11 (PCT)
 149 SPG12 (PCT)
 150 SPG13 (PCT)
 151 RBC K (MEQ/L CELLS)
 152 LCF K (MEQ/L CELLS)
 153 UNS K (MEQ/L CELLS)
 154 HCF K (MEQ/L CELLS)
 155 RBC NA (MEQ/L CELLS)
 156 LCF RETIC (PCT)
 157 K INFILUX TOT (MEQ/L RBC/HR)
 158 K INFILUX OUA (MEQ/L RBC/HR)
 159 K INFILUX ACT (MEQ/L RBC/HR)
 160 INT FRAG BEGIN (PCT)
 161 INT FRAG 50% (PCT)
 162 INT FRAG END (PCT)
 163 INT FRAG BEGIN (MIN)
 164 INT FRAG 50% (MIN)
 165 INT FRAG END (MIN)
 166 24 HR FRAG BEGIN (PCT)
 167 24 HR FRAG 50% (PCT)
 168 24 HR FRAG END (PCT)
 169 24 HR FRAG BEGIN (MIN)
 170 24 HR FRAG 50% (MIN)
 171 24 HR FRAG END (MIN)

LABELS FOR EXPERIMENT M110

172 DISCOCYTE (PCT)
 173 KNIZOCYTE (PCT)
 174 STOMATOCYTE (PCT)
 175 SPHEROCYTE (PCT)
 176 CODOCYTE (PCT)
 177 LEPTOCYTE (PCT)
 178 RETICULOCYTE (PCT)
 179 ECHINOCYTE I (PCT)
 180 OTHER (PCT)
 181 PT (SEC)
 182 PTT (SEC)
 183 FIB (MG PCT)
 184 FACTOR V (PCT)
 185 FACTOR VIII (PCT)
 186 FACTOR II (PCT)
 187 FSP (MG/ML)
 188 PLASMINOGEN (U/ML)
 189 AT-III (PCT)
 190 ESF (U) (MIU)
 191
 192 RNA-U (24 HR) (DPM/MILL CELLS)
 193 RNA-PHA (24 HR) (DPM/MILL CELLS)
 194 DNA-U (72 HR) (DPM/MILL CELLS)
 195 DNA-PHA (72 HR) (DPM/MILL CELLS)
 196 MLC RESPONSE (DPM/CULTURE)
 197 T-CELLS (UTMB) (PCT)
 198 WBC CT (THOU/CU MM)
 199 LYMPH CT (THOU/CU MM)
 200 T-CELLS (PCT)
 201 B-CELLS (PCT)
 202 BG-CELLS (PCT)
 203 BA-CELLS (PCT)
 204 BM-CELLS (PCT)
 205 N-CELLS (PCT)
 206 SEM LYMPH SMOOTH (PCT)
 207 SEM LYMPH ROUGH (PCT)
 208
 209
 210 GLU (MG/DL)
 211 CHOL (MG/DL)
 212 SGOT (MU/ML)
 213 SGPT (MU/ML)
 214 BUN (MG/DL)
 215 URIC ACID (MG/DL)
 216 ALK PHOS IU
 217 CA (MG/DL)
 218 MG (MG/DL)
 219 PO4 (MG/DL)
 220 BILI T (MG/DL)
 221 BILI D (MG/DL)
 222 CREAT (MG PCT)
 223 CPK (MU/ML)
 224 LDH (MU/ML)
 225 OSMOL (MOSM/L)
 226 NA (MEQ/L)
 227 K (MEQ/L)

LABELS FOR EXPERIMENT M110

229 CL (MEQ/L)
 230 TRIGLY (MG PCT)
 231 CO2 (MG PCT)
 232 TURBIDITY (MEQ/L)
 233
 234
 235 RETIC CLASS YOUNG (PCT)
 236 RETIC CLASS INTER (PCT)
 237 RETIC CLASS MATURE (PCT)
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LABELS FOR EXPERIMENT M110

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LABELS FOR EXPERIMENT M110

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LABELS FOR CLINICAL/ENVIR DATA

1 MAJOR MISSION ACTIVITY
 2 MISSION ACTIVITY #2
 3 MISSION ACTIVITY #3
 4 MISSION ACTIVITY #4
 5 MISSION ACTIVITY #5
 6 MISSION ACTIVITY #6
 7 MEDICAL EXPERIMENT/DTO
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 18
 19 ILLNESS/SYMPOTN/PROBLEM
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 21
 22
 23
 24
 25 MEDICATION AND DOSAGE
 26
 27
 28
 29
 30
 31 AMOUNT OF SLEEP (HOURS)
 32 SLEEP CONDITION
 33 UPPER BODY ERGOMETRY (WATT-MINUTES)
 34 LOWER BODY ERGOMETRY (WATT-MINUTES)
 35 EVA METABOLIC WORK ESTIMATE (KEAL/HR)
 36 EVA DURATION (HOURS)
 37 MK. I EXERCISE (MINI-GYM) (MINUTES)
 38 MK. II EXERCISE (SPRING) (MINUTES)
 39 MK. III EXERCISE (EXERGYM) (MINUTES)
 40 TREADMILL (MINUTES)
 41 ISOMETRICS (MINUTES)
 42 WEIGHT LIFTING (MINUTES)
 43 CALISTHENICS (MINUTES)
 44 RUNNING (MINUTES)
 45 PADDLE BALL (MINUTES)
 46 TENNIS (MINUTES)
 47 TOTAL EXERCISE TIME-MISC. TYPE (MINUTES)
 48
 49 HEIGHT (INCHES)
 50 HEIGHT (CM)
 51 WEIGHT (POUNDS)
 52 WEIGHT (KG)
 53
 54
 55 HIP MEASUREMENT (CM)
 56 WAIST (CM)
 57 CHEST GIRTH (INSPIRED) (CM)

LABELS FOR CLINICAL/ENVIR DATA

58 CHEST GIRTH (EXPIRED) (CM)
 59 NECK (CM)
 60 RIGHT ARM (CM)
 61 LEFT ARM (CM)
 62 RIGHT ARM VOLUME (CU CM)
 63 LEFT ARM VOLUME (CU CM)
 64 GRIP STRENGTH - RIGHT HAND (FT-LB)
 65 GRIP STRENGTH - LEFT HAND (FT-LB)
 66 CENTER OF GRAVITY MEASUREMENT (CM)
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 73 HISTORICAL DATA
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 91 DAILY RADIATION DOSE - SKIN (RAD)
 92 ACCUMULATED RADIATION - SKIN (REM)
 93 DAILY RADIATION DOSE - EYE (RAD)
 94 ACCUMULATED RADIATION - EYE (REM)
 95 DAILY RADIATION DOSE - BONE (RAD)
 96 ACCUMULATED RADIATION - BONE (REM)
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LABELS FOR CLINICAL/ENVIR DATA

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167 AVERAGE DAILY TEMPERATURE (F) 93
168 AVERAGE AMBIENT PRESSURE (PSIA)
169 PARTIAL PRESSURE OXYGEN (PSIA)
170 PARTIAL PRESSURE NITROGEN (PSIA)
171 PARTIAL PRESSURE CO2 (MM HG)

LABELS FOR CLINICAL/ENVIR DATA

172 DEW POINT (F)
173 RELATIVE HUMIDITY (%)
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END ONSITE PRINTOUT ON DECEMBER 3, 1975 AT 08:59:12
DB6-G03432*TPF\$(0).W(0)

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(GE TIR 741-MED-5003)

Reference 2 Volume 2, User's Guide for the Biostatistical Data Analysis System; Final Report, Skylab Endocrine-Metabolic Experiment Data Analysis, Contract NAS9-14192 - February 28, 1975.
(GE TIR 741-MED-5003)

